

**BOZEMAN**<sup>MT</sup>  
FIRE DEPARTMENT

2023

# COMMUNITY RISK ASSESSMENT/ STANDARDS OF COVER



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# **BOZEMAN**<sup>MT</sup>

## FIRE DEPARTMENT

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2023

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## Executive Summary

The Bozeman Fire Department (BFD), with support of the Bozeman City Commission, is committed to pursuing accreditation with the Center for Public Safety Excellence (CPSE). With the understanding of the accreditation process, BFD has committed to continuous quality improvement. In October 2022, the BFD partnered with the Technical Advisor Program (TAP) to create a Community Risk Assessment/Standards of Cover (CRA/SOC) document.

This study is a comprehensive assessment of the risks present in our response district, the resources deployed to respond to these risks, and a methodology to assess performance and forecast future emergency response needs. Data collection and analysis are key components of the study; great care was taken to ensure accuracy and relevance regarding what is measured and why. Emergency response performance from 2020 through 2022 was evaluated and baseline metrics were created from the data analysis. New response time goals, “Benchmarks,” were established for each of the four classifications of response: Fire, EMS, Technical Rescue, and Hazardous Materials. The results of these efforts will indicate where our future facilities should be located and what resources (personnel and equipment) will be stationed there. The driving purpose of these efforts is to provide the best level of emergency services to our communities today and tomorrow, in a planned and cost-effective way.

As part of this work, this process included dividing the city into four geographic planning zones (GPZs). Responses in each GPZ were measured to evaluate performance and gaps within the scope of fire department services. Moving forward, the methods and procedures identified in this study will be re-evaluated to ensure they are producing expected outcomes. Additionally, this living document will evolve and respond to future needs in support of our mission.

“Problem Solving Through Compassionate and Professional Service Since 1884”

## **A. Description of Community Served**

### **Introduction**

The City of Bozeman and the Bozeman Fire Department are committed to pursuing excellence in their fire department planning and operations. Bozeman Fire wants to ensure that their services are delivered to citizens in a consistent and realistic manner. The fire department has identified the development of a Community Risk Assessment (CRA) and the Standards of Cover (SOC) as a critical piece of this planning process. The leadership of the City of Bozeman and Bozeman Fire Department believe that identifying risks within the community and developing a standard response to these risks is a valuable study that ensures efficient and consistent deployment of resources.

The Community Risk Assessment is a formalized process used to study the risks inherent to a community. The study of Bozeman's community risk uses historical data to determine the likelihood of specific emergencies occurring, the consequences to the overall community, and the impact of these emergencies on fire department service continuity. Once a comprehensive picture has been painted of the risk profile, the Bozeman Fire Department will work with stakeholders to determine the objective response factors for the Bozeman Fire Department. This culminates in the Standards of Cover document.

While the development of a CRA/SOC can be used as a stand-alone process, both the City of Bozeman and the Bozeman Fire Department see this as the first step in the overall pursuit of excellence. The Bozeman City Commission has identified the pursuit of fire department accreditation via the Center for Public Safety Excellence as a goal in its adopted strategic plan. Sharing this common vision for accreditation with the city commission, the fire department has also listed accreditation as a goal in its strategic plan.

The fire department has assembled an accreditation team of fire department administration and line-level staff to work on this project, strengthening the value of labor and management in this collaborative process. While the core team will be the primary work group for developing this CRA/SOC, the hope is to engage and involve as many members of the fire department and community as possible to develop a comprehensive plan for the future of the Bozeman Fire Department.

### **Community and Department Legal Basis**

The City of Bozeman is an authorized, self-governing city established under Title 7 of the Montana Code-Annotated (MCA). Pursuant to [MCA 7-3-701](#), the City of Bozeman has an adopted a city charter that was first created in April 1883, and last updated and approved by the voters on November 7, 2006. The city operates under a commission-manager form of government and is considered a first-class city (population of over 10,000) by MCA.

The Bozeman Fire Department is an authorized municipal fire department that operates under the authority of [MCA 7-33-4101](#), with the powers of the fire chief coming from MCA 7-33-2001 and the powers to adopt and enforce fire codes coming from [MCA 7-33-4202](#). Within the Bozeman City Charter, the powers and authority of the fire department can be found in [Chapter 18](#) of the Bozeman Municipal Code. The powers and authority of the fire chief can be found in [Chapter 2, Division 3](#), of the Bozeman Municipal Code.



## History of the Community

The Gallatin Valley, including the area Bozeman now sits on, was frequented by numerous indigenous tribes, including Shoshone, Nez Pierce, Sioux, Flathead, and Blackfeet. However, the valley is generally considered to have been the territory of the Crow Tribe. It was known as the “Valley of Flowers.”

William Clark, of the Lewis and Clark expedition, camped three miles east of what is now Bozeman in 1806 on their return from the Pacific Ocean. Clark made note of the future town site’s location in his journals.

From the early 1800s to around 1840, the area was frequented by notable fur trappers and mountain men such as Jim Bridger and John Colter.

In 1863 John Bozeman, after whom the town would eventually be named, opened the Bozeman Trail. It was a northern route off the Oregon Trail, leading to the mining town of Virginia City. John Bozeman, Daniel Rouse, and William Beall platted the town in 1864, stating, “standing right in the gate of the mountains ready to swallow up all the tenderfeet that would reach the territory from the East, with their golden fleeces to be taken care of.” Interstate 90 still utilizes the same mountain pass bringing people and goods into Bozeman and the Gallatin Valley. Red Cloud’s War closed the Bozeman Trail in 1868, but the excellent farmland still attracted settlers.

Bozeman grew into a supply hub for the gold fields of Virginia City (the territorial capital) and Bannock. Agriculture was a major economic driver during this time, and Nelson Story is credited with bringing the first large herd of cattle into the area in 1866. The Calvary post of Fort Ellis to the east was established in 1867 and decommissioned in 1886. Supplying the fort was an economic boom for the area. The Northern Pacific Railroad reached Bozeman from the East in 1883. The railway is still active and with a renewed interest in passenger service in recent years.

After a failed bid to become the state capital, Bozeman was issued the state land grant college named the Agricultural College of the State of Montana. Eighth Avenue and its wide boulevard were constructed to attract the capital, and the college now known as Montana State University is located on what would have been Capital Grounds. The college is now the biggest in the state, with an enrollment nearing 17,000 students. It is also Bozeman’s largest employer.

Bozeman was known as an agricultural area and, while still part of the area economy, tourism, tech, and remote workers are driving the area now with a population boom from 3,500 in 1900 to 53,293 in 2020.

## Community Financial Basis

The City of Bozeman's most recent budget, [FY-23](#), has total revenues budgeted at \$177 million.

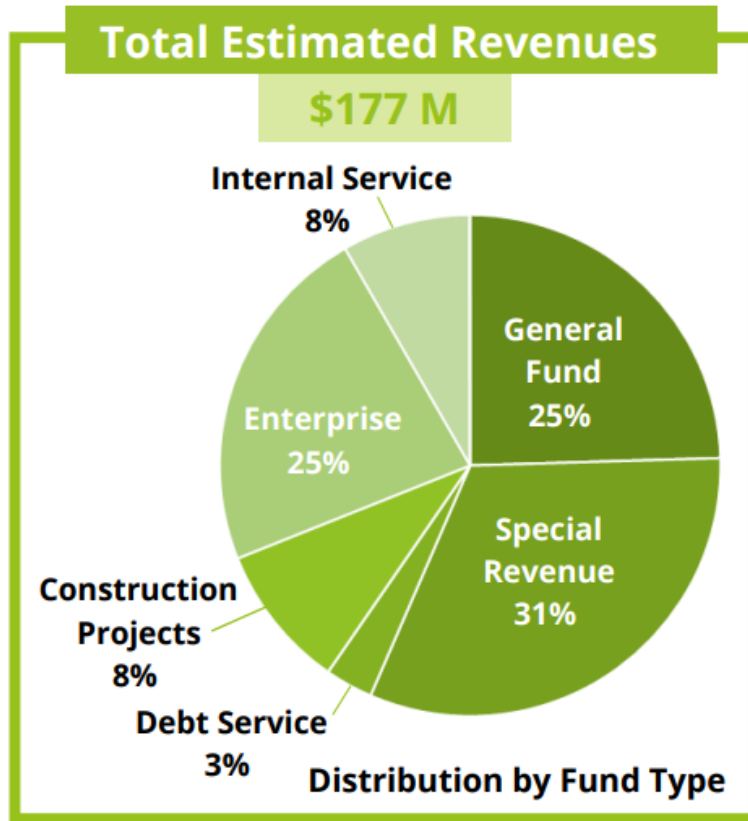
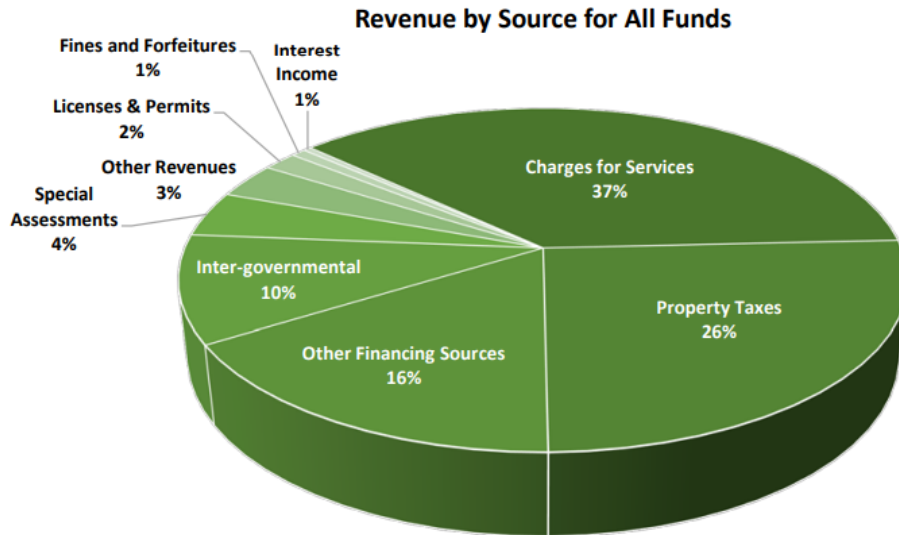


Figure 1: Estimated Revenues (FY23)

These revenues are generated via three primary streams,

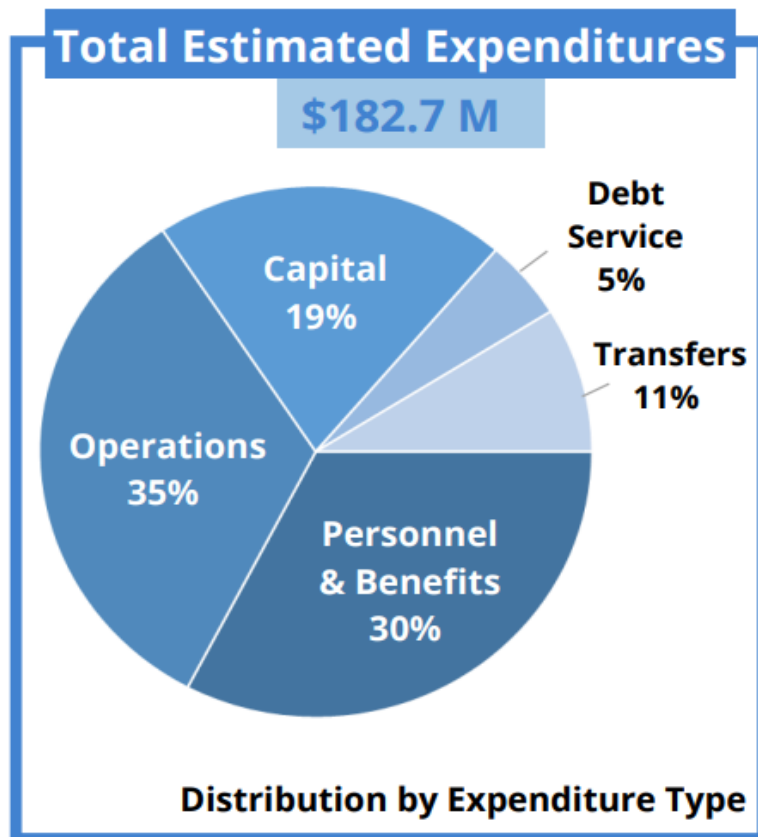
- Property Taxes- To calculate property tax revenues, capital improvement projects, and costs for salary and benefits are evaluated against total mill levies available to the city. It is important to note that the property tax values set contains lagging data, meaning that every other year, the price changes. When viewed over time, the two-year re-appraisal period is reflected in the percent change that is flattened out year over year.
- Special Assessments- City property owners pay annual street maintenance, arterial street, tree maintenance, and parks & trails assessments based on the square footage of the lot they own.
- Utility Rates- The city assesses water, sewer, stormwater, solid waste, and recycling rates within the city. Approved rates are based on the adopted model. Water and sewer rates for all user classes based on costs of services adjust annually to reflect usage and capital costs.

In addition to these primary revenue sources, the city does have impact fees and fees for service, with two examples from the fire department being the Story Mill Fire Protection Agreement and the Montana State University Fire Service Agreement.



**Figure 2: Revenue by Source for All Funds**

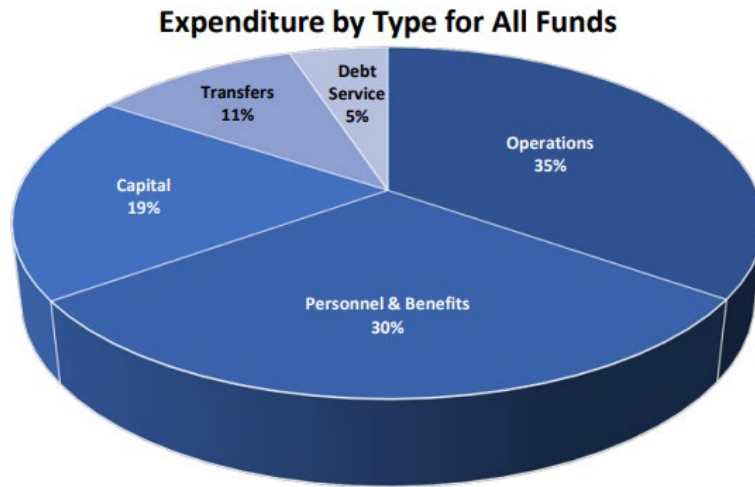
Expenditures for the most recent budget, [FY-23](#), are estimated at \$182.7 million.



\*Estimated expenditures greater than estimated revenues related to planned ARPA spending

**Figure 3: Estimated Expenditures (FY23)**

These expenditures are broken across five different funds as outlined below:

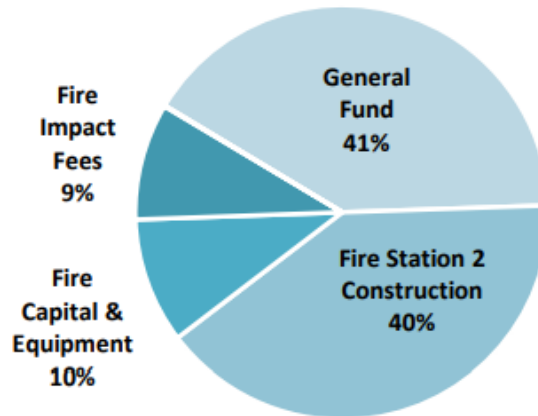


**Figure 4: Expenditure by Type for All Funds**

The operations, including personnel and benefits for the fire department, come from the city’s general fund, with funding for fire prevention personnel coming from the building fund, a special revenue fund comprised of plan review, permit, and inspection fees.

In looking at the current general fund allocations, the fire department accounts for 15% of the city’s general fund or approximately \$16.8 million that breaks down in the following manner:

- \$6.8 million for staffing and operations (89% salaries and benefits)
- \$1.5 million for purchase of future fire station location property (impact fees)
- \$1.6 million for approved capital purchases in FY-23 (dedicated four mil levy)
- \$6.7 million for the construction of Fire Station 2 (bond proceeds)



**Figure 5: BFD General Fund Allocations**

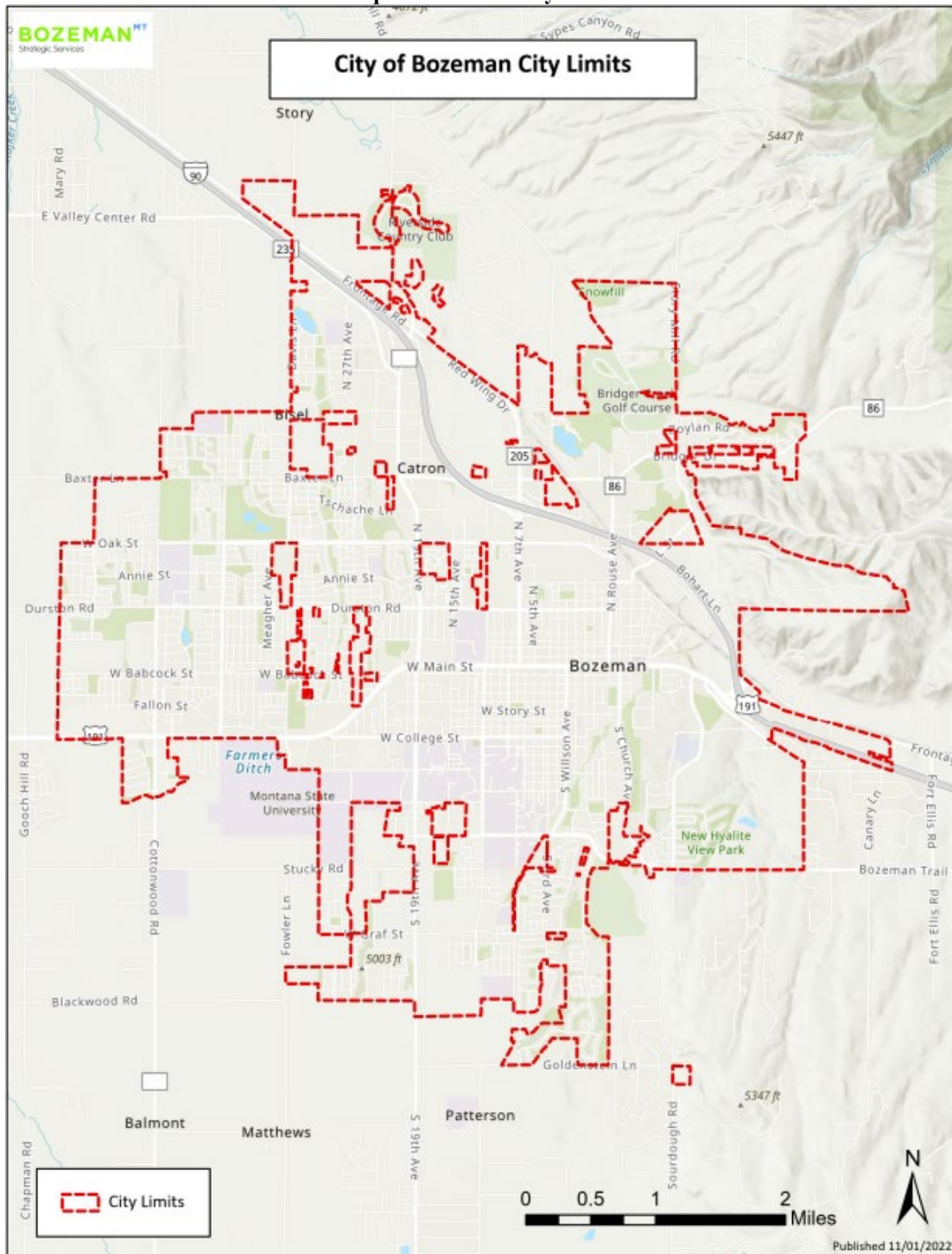
The city conducts two budgeting processes per year -

- Capital: The city is required to develop and approve a five-year capital budget by December 15<sup>th</sup> of each year.
- Operating: The city develops a general operating budget annually with a June adoption ahead of the July 1 fiscal year start.

## Community Boundaries

The fire department's jurisdictional boundaries are created by the city of Bozeman's geographical boundaries and the boundary of its contract agency, Story Mill Fire District. The City of Bozeman encompasses 20.91 square miles for the BFD response area. The department has mutual aid agreements with four neighboring fire districts or fire departments that border the coverage areas - Central Valley Fire District to the west, Bridger Canyon Rural Fire District to the north, Fort Ellis Fire Service Area to the east, and Hyalite Rural Fire District to the south.

Map 1: Bozeman City Limits



## **Community Planning Areas**

### **Urban Neighborhood**

This category primarily includes urban density homes in various types, shapes, sizes, and intensities. Large areas of any single type of housing are discouraged. In limited instances, an area may develop at a lower gross density due to site constraints and/or natural features such as floodplains or steep slopes. Complementary uses such as parks, home-based occupations, fire stations, churches, schools, and some neighborhood-serving commerce provide activity centers for community gatherings and services. The Urban Neighborhood designation indicates that development is expected within municipal boundaries, which may require annexation before development.

### **Traditional Core**

The traditional core of Bozeman is Downtown. This area exemplifies high-quality urban design, including an active streetscape supported by a mix of uses on multiple floors, a high level of walkability, and a rich architectural and local character. Additionally, essential government services and flexible spaces for events and festivals support opportunities for civic and social engagement. The intensity of development in this district is high, with a floor area ratio (FAR) well over one. As Bozeman grows, continued evolution is necessary for long-term resilience. Challenges exist, particularly around keeping local identity intact, balancing growth sensitively, and welcoming more transportation modes and residents. Underdevelopment and a lack of flexibility can threaten the viability of the land use designation. Future development should be intense while providing areas of transition to adjacent neighborhoods and preserving the character of the Main Street Historic District through context-sensitive development.

### **Residential Mixed Use**

This category promotes neighborhoods substantially dominated by housing yet integrated with small-scale commercial and civic uses. The housing can include single-attached and small single-detached dwellings, apartments, and live-work units. If buildings include ground-floor commercial uses, residences should be located on an upper floor. Variations in building mass, height, and other design characteristics should contribute to a complete and interesting streetscape. Secondary supporting uses, such as retail, office, and civic uses, are permitted on the ground floor. All uses should complement existing and planned residential uses. Non-residential uses are expected to be pedestrian-oriented and emphasize the human scale with modulation in larger structures. Stand-alone, large, non-residential uses are discouraged. Non-residential spaces should provide an interesting pedestrian experience with quality urban design for buildings, sites, and open spaces. This category is appropriate near commercial centers. Larger areas should be well served by multimodal transportation routes. Multi-unit, higher-density urban development is expected. Any development within this category should have a well-integrated transportation and open space network that encourages pedestrian activity and provides ready access within and adjacent development.

### **Regional Commercial and Services**

Regionally significant developments in this land use category may be developed with physically large and economically prominent facilities requiring substantial infrastructure and location near significant transportation facilities. Due to the scale of these developments, location and transition between lower-density uses are important. Residential space should be located above the first floor to maintain land availability for necessary services. Development within this category needs well-integrated utilities, transportation, and open space networks that

encourage pedestrian activity and provide ready access within and adjacent to the development. Large community scale areas in this land use category are generally 75 acres or larger and are activity centers for several surrounding square miles. These are intended to service the overall community and adjacent neighborhoods and are typically distributed by a one-to-two-mile separation.

## **Community Commercial Mixed Use**

The Community Commercial Mixed Use category promotes commercial areas necessary for economic health and vibrancy. This includes professional and personal services, retail, education, health services, offices, public administration, and tourism establishments. Density is expected to be higher than in most commercial areas in Bozeman and should include multi-story buildings. Residences on upper floors, in appropriate circumstances, are encouraged. The urban character expected in this designation includes urban streetscapes, plazas, outdoor seating, public art, and hardscaped open space and park amenities. High-density residential areas are expected in close proximity.

Developments in this land use area should be located on one or two quadrants of intersections of the arterial and/or collector streets and integrated with transit and non-automotive routes. Due to past development patterns, there are also areas along major streets where this category is organized as a corridor rather than a center. Although a broad range of uses may be appropriate in both types of locations, the size and scale are to be smaller within the local service areas. Building and site designs made to support easy reuse of the building and site over time are important. Mixed-use areas should be developed in an integrated, pedestrian-friendly manner and should not be overly dominated by any single use. Higher-intensity uses are encouraged in the core of the area or adjacent to significant streets and intersections. Building height or other transition methods may be required for compatibility with adjacent development. Smaller neighborhood scale areas are intended to provide local service to an area of approximately one half-mile to one-mile radius and passersby. These smaller centers support and help give identity to neighborhoods by providing a visible and distinct focal point as well as employment and services. Densities of nearby homes needed to support this scale are an average of 14 to 22 dwellings per net acre.

## **Maker Space Mixed Use**

This classification provides areas for dynamic mixed uses, including technology industries, manufacturing, research and development, offices, and supportive uses to provide employment and services to the community. Opportunity for live/work may be provided or housing elements integrated on upper floors of mixed-use buildings. Careful consideration is given to public policies supporting compatibility to enable mixed uses to coexist in harmony. Development within these areas is often intensive, and the area is connected to significant transportation corridors. Although use in these areas may be intense, they are part of the larger community, and standards for architecture and site design apply.

## **Industrial**

This classification provides areas for manufacturing, warehousing, technology industries, and transportation hubs. Development within these areas is intensive and is connected to significant transportation corridors. Uses that would be harmed by industrial activities are discouraged from locating in these areas. Although use in these areas is intense, they are part of the larger community, and standards for architecture and site design apply. In some circumstances,

uses other than those typically considered industrial have been historically present in areas that were given an industrial designation in prior growth policies. Careful consideration must be given to public policies to allow these mixed uses to coexist in harmony.

**Public Institutions**

The land in this classification is owned by a public entity. A variety of activities are undertaken in this land use classification. Schools are a dominant use, including Montana State University. Other typical uses are libraries, fire stations, and publicly operated utilities. A significant portion of Bozeman’s employment occurs within this category.

**Parks and Open Lands**

All recreational lands, including parks, are included within this category, as well as certain private lands. These areas are generally open in character and may or may not be developed for active recreational purposes. This category includes conservation easements or other private property which may not be open for public use.

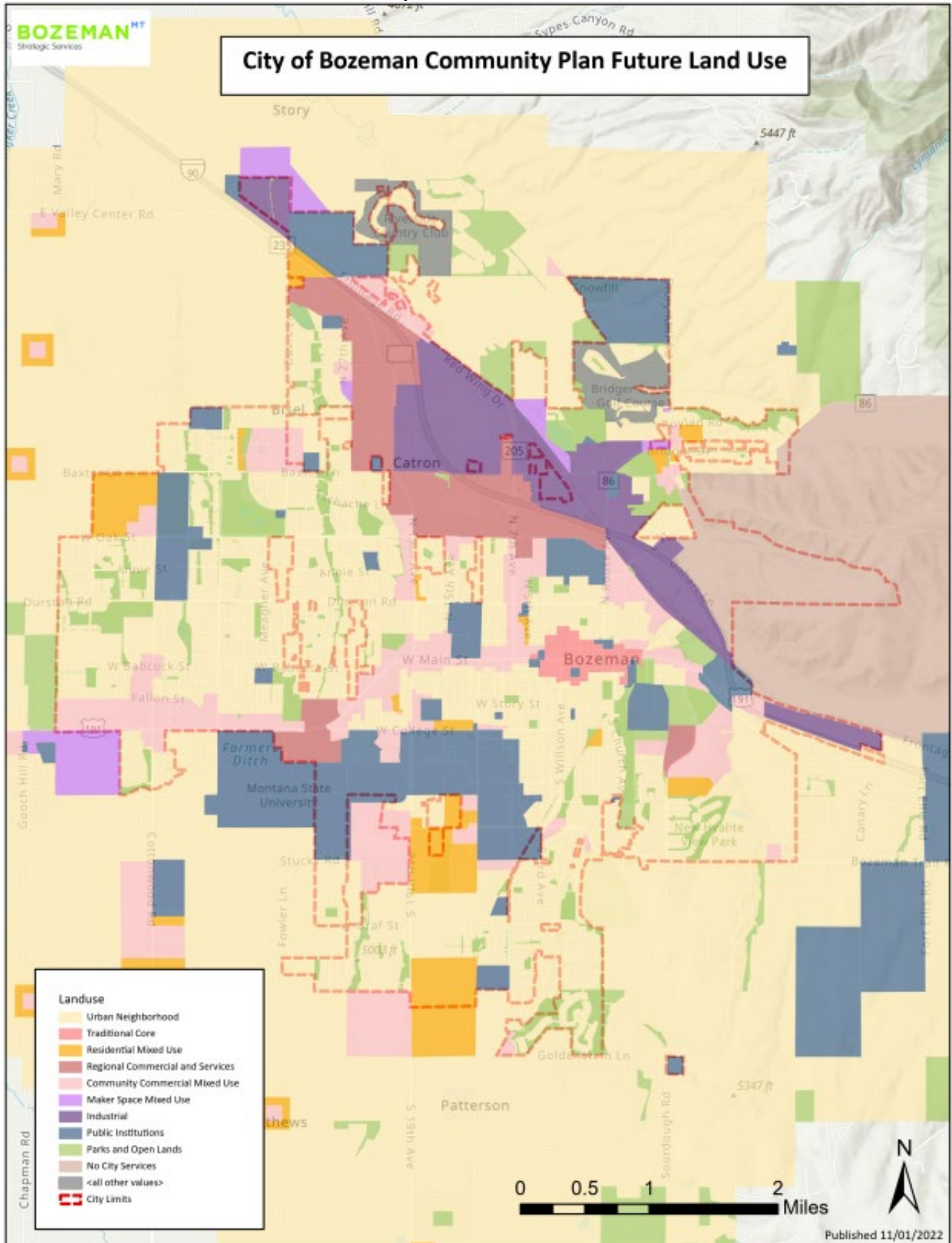
**No City Services**

This category designates areas where development is considered inappropriate over the 20-year planning horizon of this growth policy because of natural features, negative impacts on the desired development pattern, or difficulty providing urban services. As a result, the city does not anticipate building infrastructure to serve these lands at any time during the planning period. As the city’s growth policy is updated, some areas classified as No City Services may be reclassified. Suburban or rural density subdivisions in these areas are discouraged because they impede orderly and cost-effective city expansion.



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Map 2: Future Land Use



## Community Transportation Systems

The roadways in the City of Bozeman are classified according to certain parameters, including but not limited to geometric configuration, traffic volumes, spacing in the community's transportation grid, speed, and adjacent land use. The roadways are broken down into:

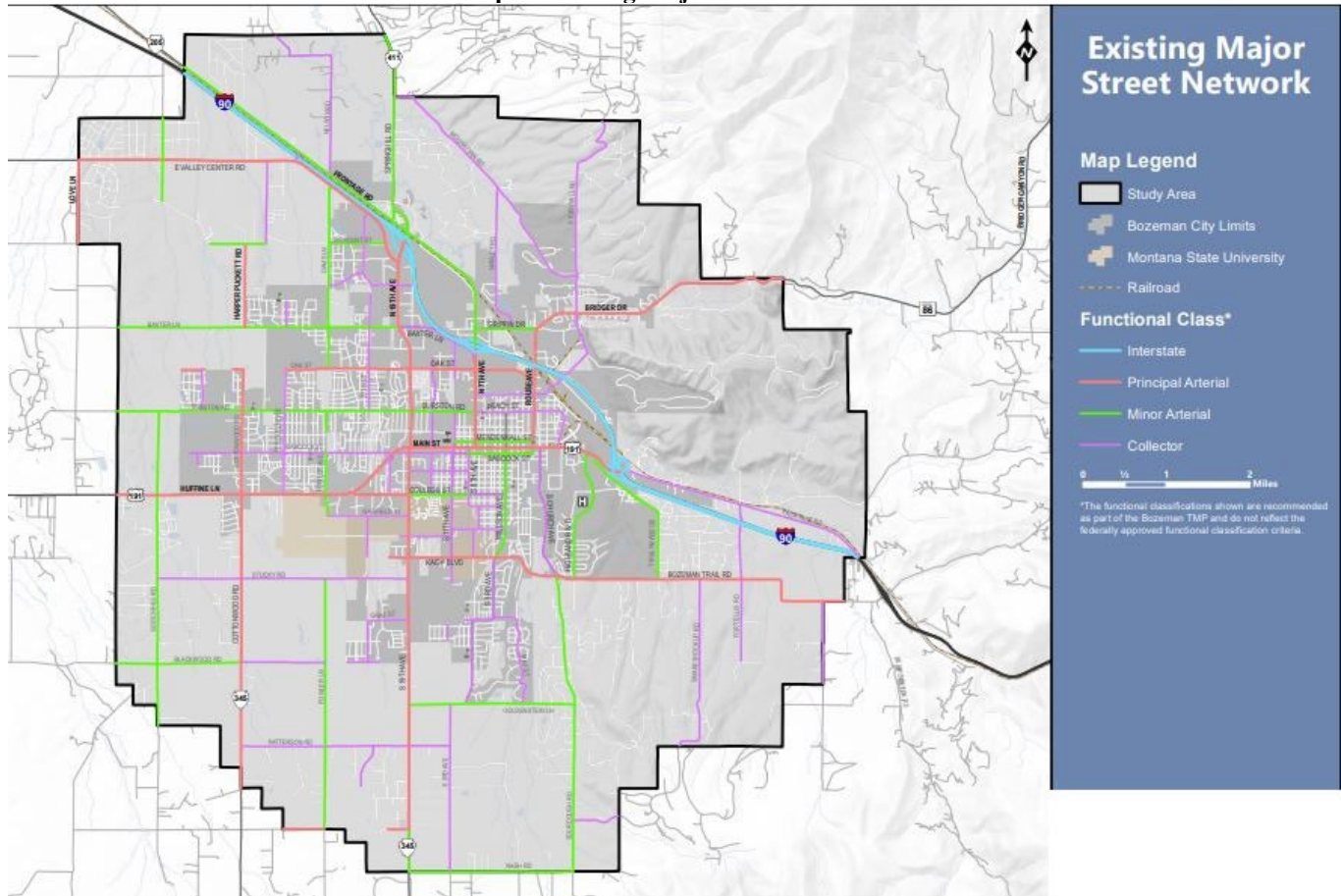
**Interstate:** Designed for regional and interstate transportation of people and goods. Primary users include residents, commuters, travelers, and freight operations. Interstate highways are characterized by having fully controlled access, highspeed designs, and a high level of driver comfort and safety.

**Principal Arterial:** Designed to serve the major centers of activity, the highest traffic volumes corridors, and the longest trip distances in the area. This type of roadway carries a high proportion of the local traffic. Most of the vehicles entering and leaving the area utilize principal arterials. Significant intra-area travel is served by principal arterials. These areas exist between central business districts, outlying residential areas, and between major suburban centers.

**Minor Arterial:** The minor arterial street system interconnects with and augments the principal arterial system. They accommodate trips of moderate length at a somewhat lower level of travel mobility than the principal arterials, and they distribute travel to smaller geographic areas.

**Collector:** The collector street network serves a joint purpose – to provide equal priority to the movement of traffic and to access residential, business, and industrial areas. This type of roadway differs from those of the arterial system in that collector roadways may traverse residential neighborhoods. The collector system distributes trips from the arterials to the user's ultimate destinations. The collector streets also collect traffic from local streets in the residential neighborhoods and channel the traffic to the arterial system.

**Map 3: Existing Major Street Network**



The City of Bozeman continues to see an increase in the use of bicycles throughout the city. Listed are the various types of bicycle facilities that are found throughout Bozeman.

### **Bike routes**

Bike routes include paved shoulders and shared roadways where bicyclists and cars operate within the same travel lane, either side by side or in a single file depending on roadway configuration. Bozeman has approximately 18 miles of bike routes officially designated through signage.

### **Bike Lanes**

Bike lanes are a type of on-street bikeway that uses signage and striping to delineate the right-of-way assigned to bicyclists and motorists. Bozeman has approximately 33 miles of on-street bike lanes.

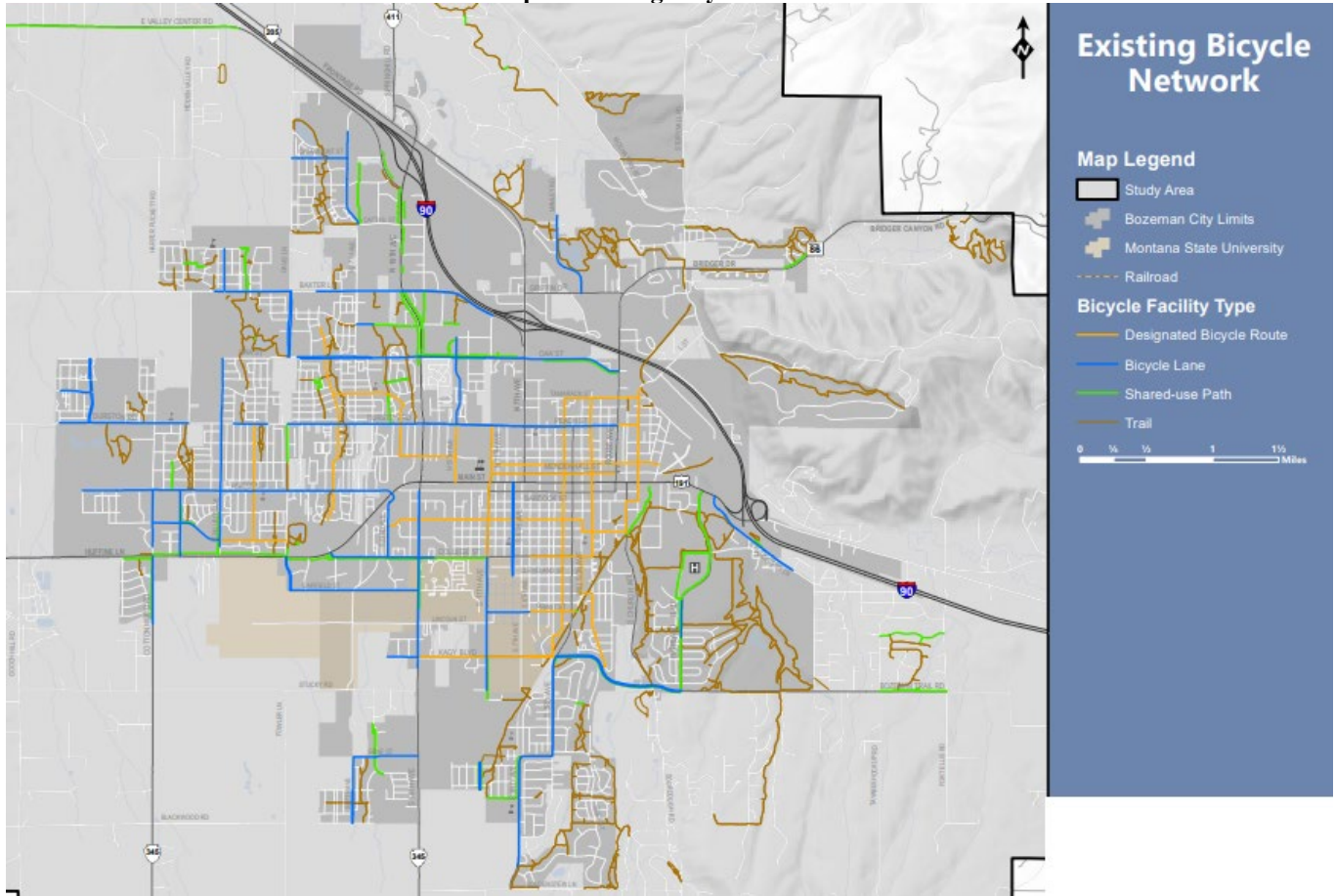
### **Shared-use Paths**

Shared-use paths are off-street paved trails designated for bicyclists, pedestrians, and other non-motorized users, such as skateboarders and rollerbladers. Bozeman has approximately 23 miles of shared-use paths.

### **Natural Surface Trails**

Natural surface trails are present in nearly every part of Bozeman. These facilities link neighborhoods, provide connections along streams, and follow old railroad alignments. Bozeman has approximately 92 miles of unpaved natural surface trails. Bozeman's natural surface trail network provides significant transportation utility for many residents; however, many can become unusable in the winter due to snow accumulation.

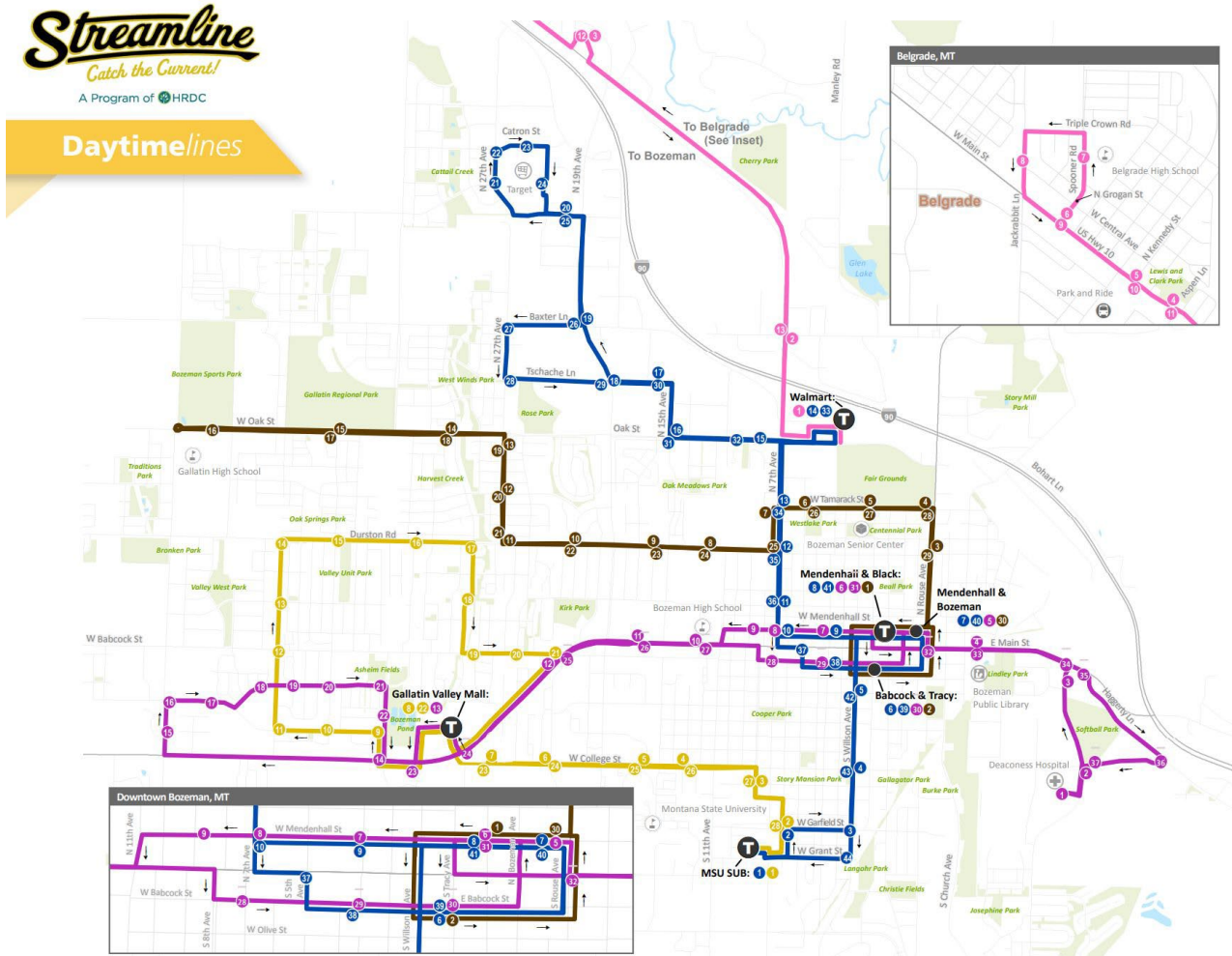
**Map 4: Existing Bicycle Network**



### **Bus Services**

Streamline provides fixed-route public transportation in the City of Bozeman and surrounding communities. Riders are overwhelmingly MSU students, faculty, and staff. This is because universities tend to generate significant ridership, and Streamline’s service is MSU-centric, with routes and schedules designed to serve MSU students and employees.

Map 5: Rail Network



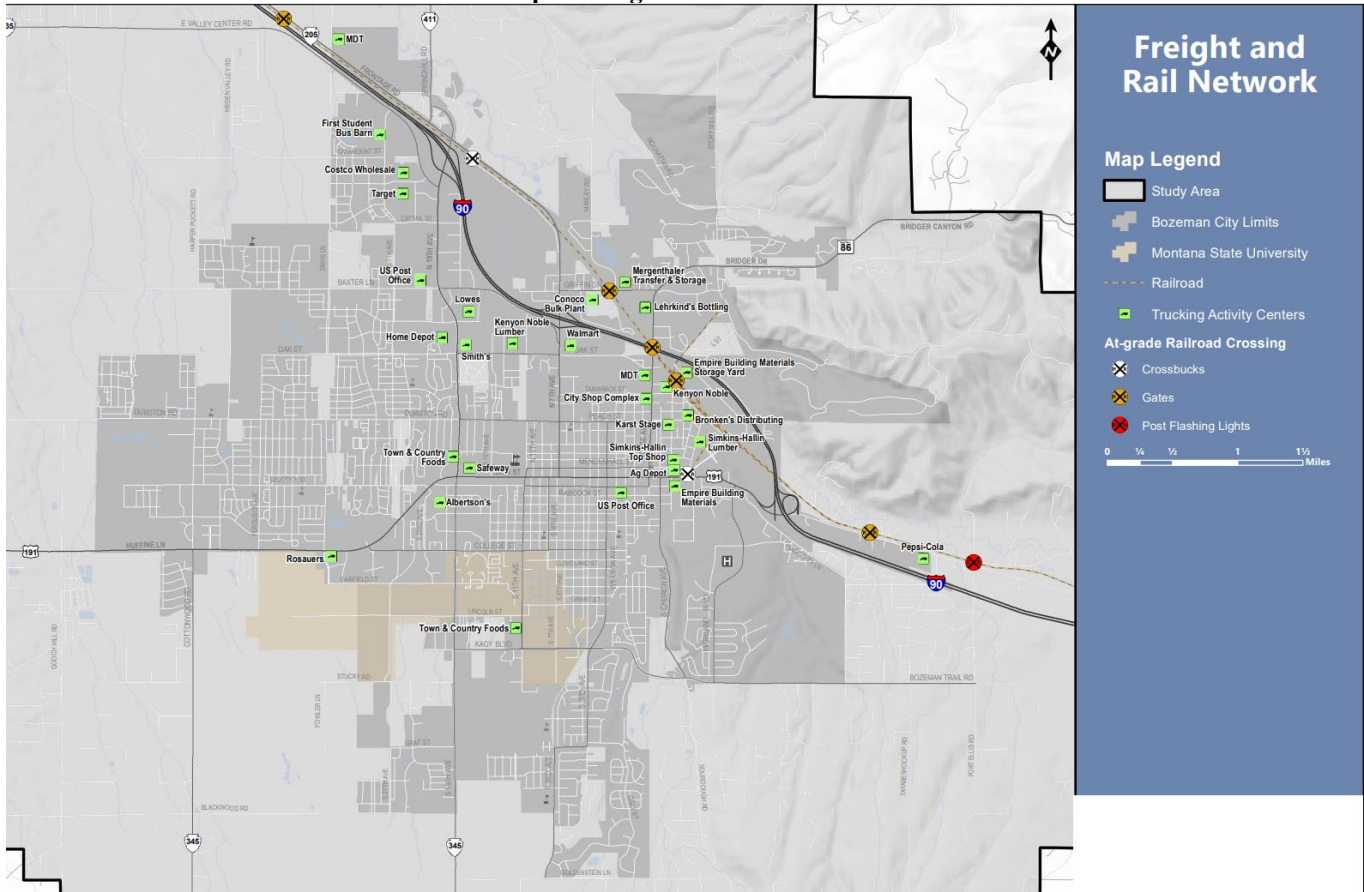
**Freight and Rail Network**

Bozeman is situated near the junction of Interstate-90 (I90), US Highway 191 (US 191), State Highway 86, and State Highway 84. I90 connects Bozeman with Billings and Interstate 94 to the east, and Butte and Interstate 15 to the west. US 191 extends south to West Yellowstone, connecting to US Highway 20. State Highway 84 travels west to its junction with US Highway 287 in Norris. State Highway 86 serves northbound traffic from Bozeman to its intersection with Highway 89. Each of these routes serves regional, national, and international trade. As such, it is important that delivery vehicles are able to travel through the area in a safe and effective manner.

**Rail**

The main rail line through Bozeman is currently owned by BNSF Railway (BNSF) and is leased to Montana Rail Link (MRL). Speed limits range from 10 to 45 miles per hour (mph) on the main track and 10 to 35 mph on turnouts, sidings, and other tracks. The section of track through Bozeman is designated as a “Federal Railroad Administration Excepted Track,” effectively limiting operations to a maximum of 10 mph. A total of eight at-grade crossings exist within the area. Traffic control at these sites varies and includes crossbucks, gates, or posts with flashing lights.

**Map 6: Freight and Rail Network**



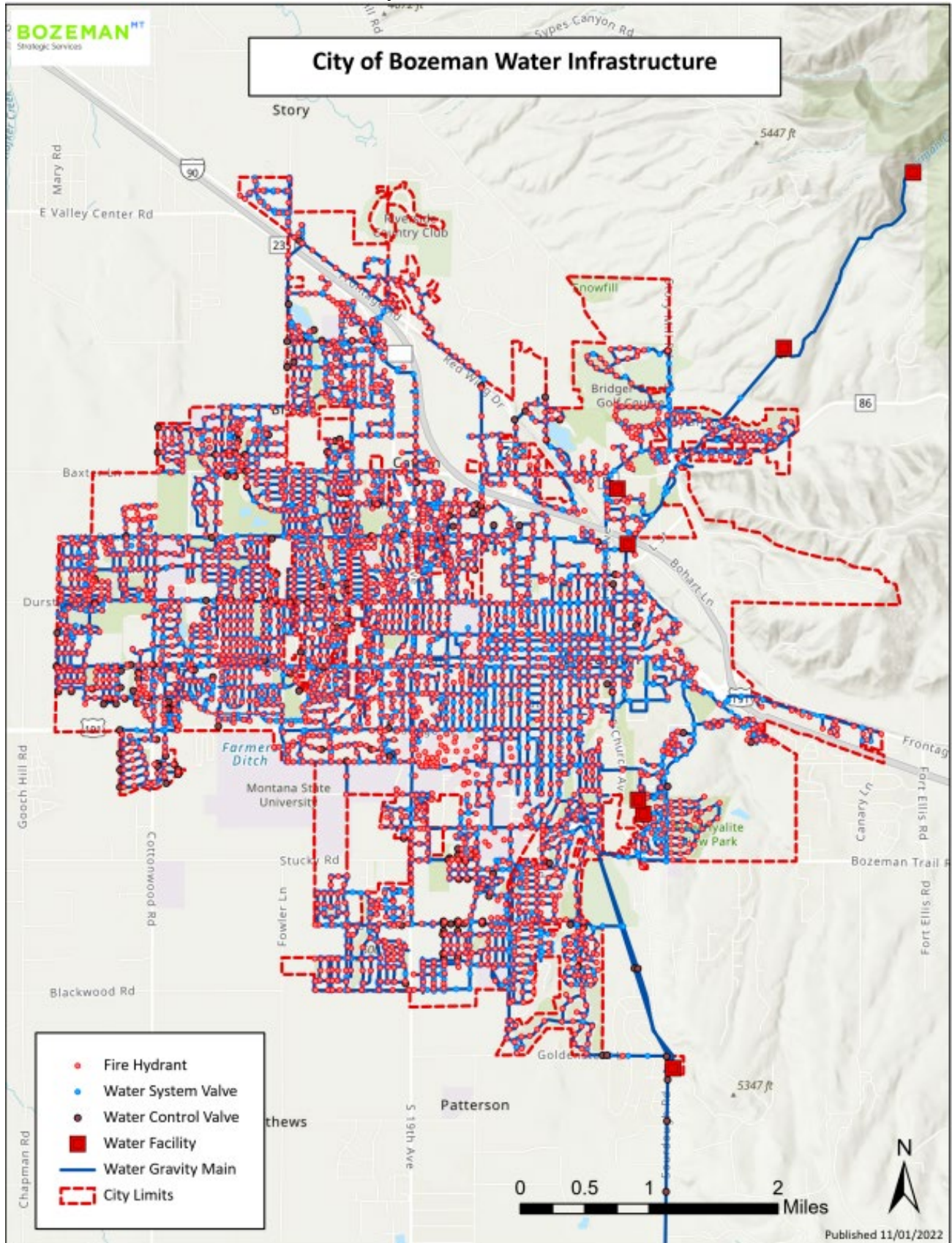
## Community Critical Infrastructure

The City of Bozeman Water and Sewer Division is responsible for providing safe drinking water to the residents and visitors of Bozeman. Along with conveying potable water through 301 miles of water mains from the Sourdough and Lyman Creek water treatment plants, the water and sewer division staff is also responsible for maintaining 238 miles of sewer mains to the water reclamation facility located on Springhill Road.

There are two pump stations in the city’s distribution system, Pear Street and the Knolls booster stations. Three existing storage facilities provide operational storage to meet the system demands, emergency storage, and fire flow storage, as well as maintain a uniform pressure in the distribution system during peak hourly demands.

Approximately 2,448 fire hydrants are used for fire protection in the Bozeman water distribution system. All fire hydrant maintenance, including testing, flowing, repair, and replacement, is the responsibility of the water and sewer division.

Map 7: Water Infrastructure



Source: <https://www.bozeman.net/home/showpublisheddocument/4977/636420174896170000>

Northwestern Energy is the sole supplier of both electrical and natural gas services to the city of Bozeman. The city has a mixture of above-ground and below-ground electrical lines, with the above-ground being primarily found in the older part of the city.

## **Community Land Use and Zoning**

The Unified Development Code (commonly called the “UDC”) is a set of regulations aimed at protecting the public health, safety, and general welfare of the community. These regulations recognize and balance the various rights and responsibilities of land ownership, use, and development. The UDC covers a wide range of topics, such as setbacks, building height, allowed uses, landscaping, affordable housing, and parking.

Development regulations need to be adaptable to address the evolving needs of the City of Bozeman. Because of this, the city utilizes a community platform that allows the citizens to provide input about the rules and regulations that impact Bozeman. Criteria that are utilized and reviewed are broken down into five criteria:

**Impact:** The scope of the proposed edit(s). Will the changes affect many individuals, projects, or a few? This criterion relates to the geographical scope and/or the significance of an impact the change may have on the community.

**Vision:** Alignment with multiple and diverse community goals such as the Strategic Plan, the Bozeman Community Plan, or other adopted plans.

**Complexity:** Complexity of proposed change(s). The development code is highly integrated, and one change may affect a number of other code sections.

**Discretion:** The city commission sets policy and controls the purse strings; therefore, they have the authority to realign resources to achieve the community’s desires. City staff applies the code daily. Staff may identify those changes that will improve service efficiency and streamline the review process without undermining the community’s desire to have adequate time to consider a development proposal, its effect on health and safety, or to wordsmith more clear and direct language while ensuring potential impacts are mitigated.

**Compliance:** Is the proposed change contrary to or required by state or federal law? In addition, a proposed change may take additional review to ensure unintended consequences are not created.



## Zoning

Bozeman is a rapidly growing city, and because of that, it can be challenging to know how the land has been allotted and what type of building can be done in any given space. The City of Bozeman is divided into districts to identify the areas and types of buildings that can be constructed. A variety of districts are established to provide locations for the many uses needed within a healthy and dynamic community. Each district, incorporated with other standards, establish allowable uses of property, separates incompatible uses, and sets certain standards for the use of land within particular zoning designations and sites:

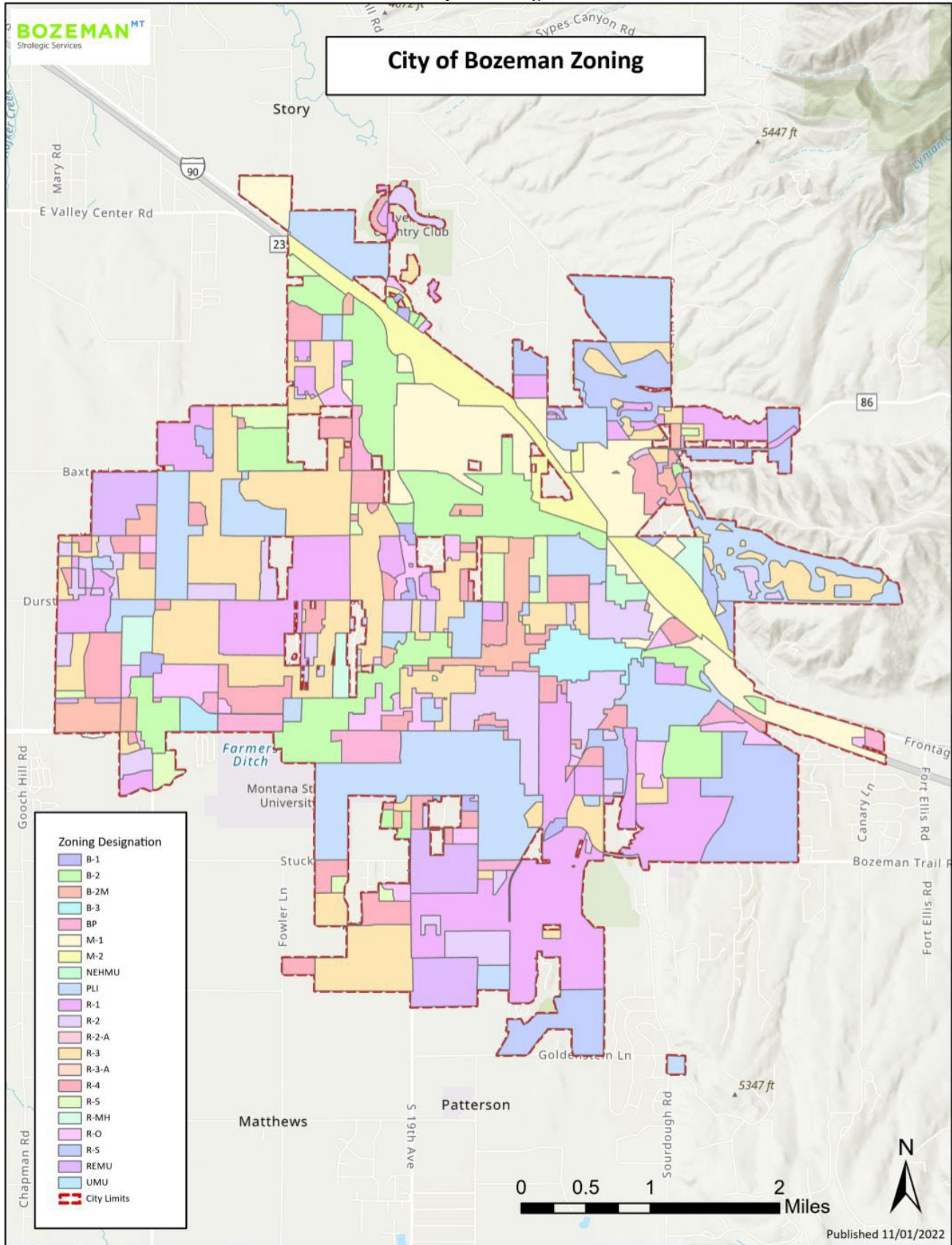
### Bozeman Residential Zoning Districts:

- Residential suburban district (R-S)
- Residential low-density district (R-1)
- Residential moderate-density district (R-2)
- Residential medium-density district (R-3)
- Residential high-density district (R-4)
- Residential mixed-use high-density district (R-5)
- Residential-office district (R-O)
- Residential manufactured home community district (RMH)

### Bozeman Commercial and Mixed-Use Zoning Districts:

- Neighborhood business district (B-1)
- Community business district (B-2)
- Community business district mixed (B-2M)
- Central district (Downtown B-3)
- Urban mixed-use zoning district (UMU)
- Light manufacturing district (M-1)
- Manufacturing and industrial district (M-2)
- Business park district (B-P)
- Public lands and institutions district (PLI)
- Northeast historic mixed-use district (NEHMU)
- Neighborhood conservation overlay district (NC)
- Entryway corridor overlay district (EO)
- Casino overlay district (CO)
- Residential emphasis mixed-use zoning district (REMU)

Map 8: Zoning



## Community Topography



The city of Bozeman is positioned in a predominantly flat valley. There is a slight slope from the southeast to the northwest, which most area rivers and streams follow. Change in elevation does not pose a significant threat to the department's operations, but there are areas within the response area that can affect response.

The highest elevation points within the Bozeman Fire Department response area are at the Hyalite View Subdivision, Graf's Subdivision, Bridger Creek Subdivision, and Story Mill Hills. Hyalite View and Graf's Subdivision are located in the southeastern section of the response area. Bridger Creek Subdivision and Story Mill Hills are in the Northern portion of the city. These areas are accessed by paved roads on a steep grade that can be hazardous during inclement weather. Story Mill Hills has moderately steep dirt roads that limit the department's access. The lowest points are at the northwestern border of the response district.

## Community Geography

Bozeman is located in southwest Montana at an elevation of 4,820 feet. The city has a total area of 20.91 square miles, making it the largest municipality in Gallatin County. The city sits in the Gallatin Valley, surrounded by mountain ranges with the Bridger Mountains to the northeast, the Gallatin Range to the south, the Tobacco Root Mountains to the west, and Horseshoe Hills to the northwest. Bozeman is east of the continental divide and 93 miles north of Yellowstone National Park. Interstate 90 is the main travel corridor that intersects with the response area at the northern end of the district.

Geography has little impact throughout the response area for Bozeman Fire Department. Geographical features could impact mutual aid partners' response, specifically for aerial assets. Bozeman Pass, along Interstate 90, is east of Bozeman and is the primary route for the third available ladder truck. The fourth available ladder truck response is impacted by the Gallatin Canyon Southwest of Bozeman. Both these features can be severely impacted by weather and other natural disasters, limiting resources to Bozeman.

Map 9: State of Montana



Source: <https://strayertravels.com/2016/10/28/top-10-towns-to-visit-1-bozeman-montana/>

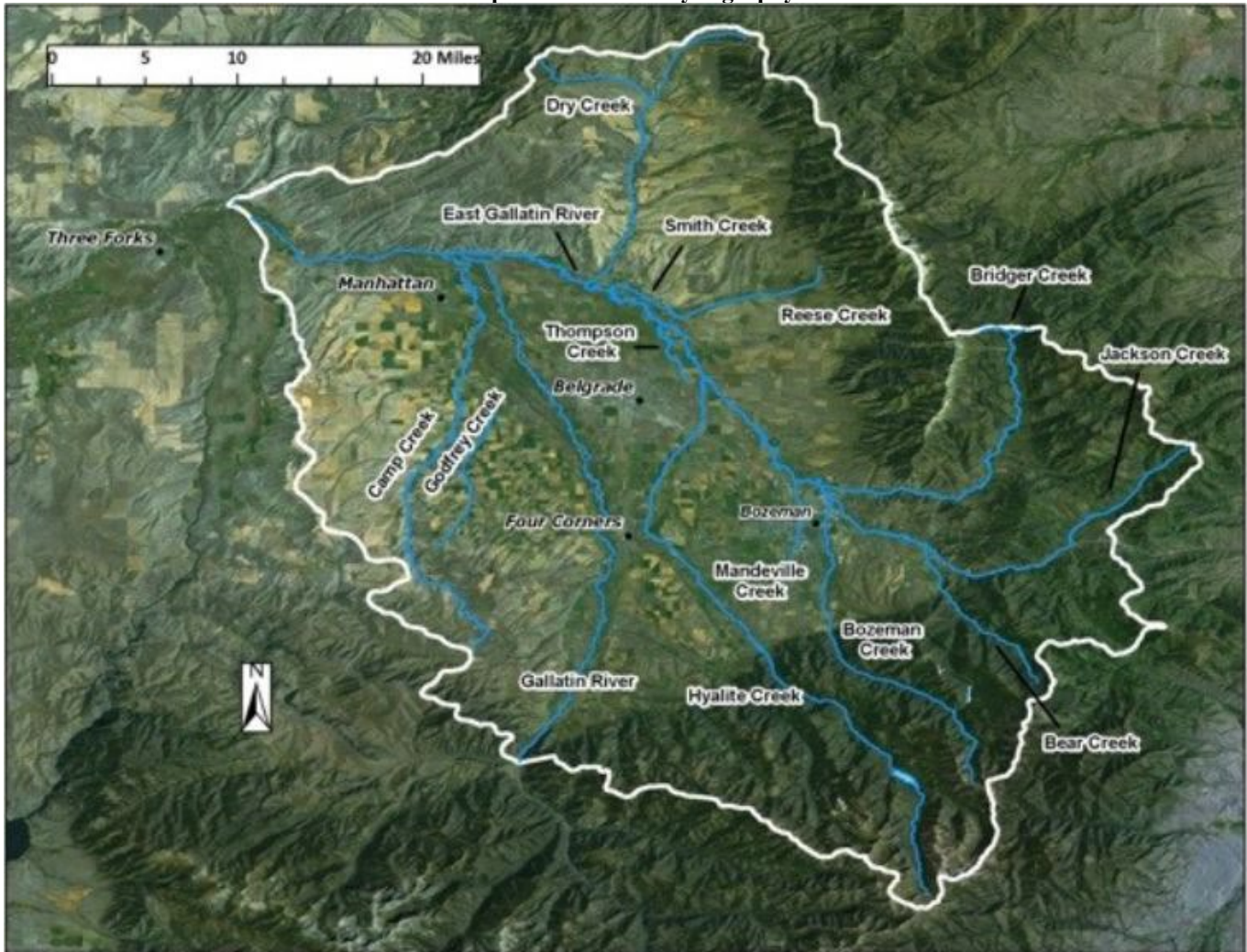
## Community Geology

The earthquake risk for Bozeman is high. There have been a total of 243 earthquakes in the area since 1931. According to the United States Geological Survey, Bozeman has a 73.92% chance of being impacted by a major earthquake in the next 50 years. Bozeman is located due north of one of the world's largest active volcanos, which can equate for increased earthquake activity. In 1974, Bozeman experienced its largest earthquake at a 4.4 magnitude.

Bozeman has few creeks that cause concern for flooding during significant weather events or the failure of Middle Creek Dam. The city could be impacted by flooding on Middle Creek and Bozeman Creek since both tributaries provide most of the water to the city. Areas just outside of the city limits would be impacted by a breach of the Middle Creek Dam. This would cause massive flooding and severely impact mutual aid partners and other emergency resources within the county.

**Community Physiography**

**Map 10: Bozeman Physiography**



Bozeman is located at the southern end of the Gallatin River and is primarily flat, with very small elevation changes in most of the town. The elevation change across the city is minimal, as shown by the elevations of the current fire stations.

Station 1, 4,760 feet

Station 2, 4,910 feet

Station 3, 4,740 feet

As the city sits in somewhat of a geographic bowl, surrounded by various ranges of the Rocky Mountains, the elevation changes rather rapidly outside city limits, with the Bridger, Gallatin, and Madison mountain ranges surrounding the city. Vegetation not within subdivisions or commercially developed areas within the city is made up primarily of wild grasses with moderate tree groves in the wetland areas. Montana State University maintains a number of agricultural areas within the heart of the city, which provides for several hundreds of acres of undeveloped but maintained land.

The city is located in what is referred to as a closed water basin and depends on annual snowfall for roughly 80% of its water supply. With the higher altitude and limited water supplies, the community is considered a high desert;

however, the groundwater in the community is considered relatively high (three to five feet in some areas of town), creating a number of small creeks and water drainages.

## Community Climate

At an elevation of 4,820 feet, Bozeman is located in Gallatin Valley in what is referred to as southwest Montana. East of the Continental Divide, Bozeman’s weather can be heavily impacted by the surrounding mountain ranges.

A few of these larger ranges include the Bridger Mountains to the north and northeast, the Gallatin Range to the south, and the Madison Range to the southwest. Other distant ranges may also influence the weather in the Gallatin Valley, more specifically, Bozeman. These ranges would include the Tobacco Root Mountains to the west and the Horseshoe Hills to the northwest, all playing a role in the valley floor’s weather patterns.

With large and small mountain ranges in the area, the weather in Bozeman can vary significantly from season to season and day to day.

**Table 1: Bozeman Climate Data**

Climate data for Bozeman <a href="#">Montana State University</a> , 1991–2020 normals, extremes 1892–present													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<b>Record high</b> °F (°C)	65 (18)	64 (18)	75 (24)	83 (28)	91 (33)	96 (36)	105 (41)	100 (38)	99 (37)	88 (31)	73 (23)	64 (18)	105 (41)
<b>Mean maximum</b> °F (°C)	51.6 (10.9)	54.0 (12.2)	63.7 (17.6)	74.0 (23.3)	79.8 (26.6)	87.8 (31.0)	93.2 (34.0)	92.6 (33.7)	87.7 (30.9)	77.3 (25.2)	62.4 (16.9)	51.8 (11.0)	94.8 (34.9)
<b>Average high</b> °F (°C)	34.2 (1.2)	36.8 (2.7)	46.1 (7.8)	54.5 (12.5)	63.2 (17.3)	71.7 (22.1)	82.1 (27.8)	81.3 (27.4)	71.4 (21.9)	57.3 (14.1)	42.3 (5.7)	33.3 (0.7)	56.2 (13.4)
<b>Daily mean</b> °F (°C)	24.6 (-4.1)	26.7 (-2.9)	35.0 (1.7)	42.5 (5.8)	51.0 (10.6)	58.6 (14.8)	66.9 (19.4)	65.6 (18.7)	56.9 (13.8)	44.9 (7.2)	32.3 (0.2)	23.9 (-4.5)	44.1 (6.7)
<b>Average low</b> °F (°C)	15.1 (-9.4)	16.6 (-8.6)	23.9 (-4.5)	30.5 (-0.8)	38.8 (3.8)	45.6 (7.6)	51.7 (10.9)	50.0 (10.0)	42.4 (5.8)	32.4 (0.2)	22.2 (-5.4)	14.5 (-9.7)	32.0 (0.0)
<b>Mean minimum</b> °F (°C)	-10.3 (-23.5)	-5.9 (-21.1)	3.0 (-16.1)	16.1 (-8.8)	26.3 (-3.2)	33.2 (0.7)	41.6 (5.3)	38.9 (3.8)	29.5 (-1.4)	13.9 (-10.1)	-0.4 (-18.0)	-9.0 (-22.8)	-18.7 (-28.2)
<b>Record low</b> °F (°C)	-36 (-38)	-43 (-42)	-29 (-34)	-10 (-23)	16 (-9)	26 (-3)	32 (0)	26 (-3)	12 (-11)	-10 (-23)	-26 (-32)	-36 (-38)	-43 (-42)

### Winter

Consuming many months a year, winter can bring an influx of visitors to the area for a wide variety of snow and ice recreation. Freezing temperatures can start as early as October and extend for as long as seven months through April, where average temperatures will remain at or below freezing.

From December through February, Bozeman may experience the coldest months, with a mean minimum range from -9.0 to -18.7 degrees Fahrenheit. The lowest temperature in recorded history, -43 °F (-41.7 °C), occurred on February 8, 1936. [\[Noaa Online Weather Data\]](#)

During these winter months, snow and ice are common due to the high elevation and low temperatures. Bozeman may experience significant snowfall, averaging 63-82 inches per winter season.

# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

**Table 2: Bozeman Precipitation by Month**

<b>Average snowfall inches (cm)</b>	12.7 (32)	13.0 (33)	13.1 (33)	12.9 (33)	3.6 (9.1)	0.8 (2.0)	0.0 (0.0)	0.1 (0.25)	0.4 (1.0)	6.0 (15)	12.5 (32)	16.2 (41)	91.3 (231.35)
<b>Average precipitation days (≥ 0.01 in.)</b>	10.7	9.5	11.8	13.7	15.4	15.3	10.1	10.1	9.0	11.0	10.2	11.0	137.8
<b>Average snowy days (≥ 0.1 in.)</b>	9.2	8.4	8.4	6.7	1.5	0.2	0.0	0.0	0.2	3.0	7.1	9.4	54.1

Snow accompanied by wind can be the most disruptive of winter weather events, and may affect power grids and travel. Common early-season snowfalls, before foliage falls from trees, may create undue weight on branches, breaking them and causing limbs to fall onto power lines and/or roadways.

In later months, dry snow mixed with directional winds can cause blizzard effects with large snow drifts and potential whiteout conditions. This can affect local and commuter vehicle travel, along with closures of schools and businesses, and delayed roadway snow and ice mitigation.

The Bozeman Fire Department handles the winter months with adaptive measures. For instance, enclosed pump panels and pump panel heaters are on the engines, automatic tire chains are on most front-line apparatus, and manual chains are available for nearly all other response apparatus. The firehouses are temperature regulated for heat in the apparatus bays and backed up with fuel-powered generators.



Source: [www.nps.org](http://www.nps.org)

## Summer

Although there was a record high on July 31, 1892 of 105°F degrees Fahrenheit [\[Noaa Online Weather Data\]](#), Bozeman generally experiences much milder summer temperatures with nighttime fluctuations dropping temperatures 30-40 degrees from that day's high.

Along with large temperature swings, Bozeman can receive up to 24 inches of precipitation annually, which is more than double the rainfall of other Montana communities east of the Continental Divide. With the temperatures and rainfall, Bozeman can experience a humid microclimate setting.

With summer temperatures reaching the high 80's to low 90's from June through September, July is typically the warmest month, with a mean maximum of 93.2°F between 1991-2020. [\[Per NOAA and NWS\]](#). With these elevated summer temperatures, afternoon thunderstorms can be common and contribute to the large temperature drops experienced in evening and nighttime hours.

With increases in summer temperatures and the potential for associated storms, including lighting in surrounding mountainous terrain, the Bozeman Fire Department can respond county-wide for wildland-urban interface incidents. Smoke related to local and regional wildfires can often become an environmental health concern during the summer months. During this time, the Department of Public Health may issue exposure warnings and suggest limited exercise to sensitive age groups and those with health concerns.

The city has a water conservation plan in place; however, the fire department is exempt from this when water is used for emergency services and training to aid in developing fire tactics and strategies.





### Community Population/Population Densities

The last U.S. Census was completed in April 2020 and counted Bozeman as having 53,293 residents. This moved Bozeman to a metropolitan designation, one of four in Montana. Current population estimates are near 56,500 residents. One of the largest contributors to Bozeman’s population is the Montana State University Campus, which had a total enrollment for the Fall of 2021 of 16,841 students. Bozeman is located in Gallatin County, which accounts for 122,500 residents, including those who live in Bozeman.

Due to the fast growth rate, Bozeman has become Montana's fourth largest metropolitan area. Bozeman is also the primary contributor to the growth of the Gallatin Valley.

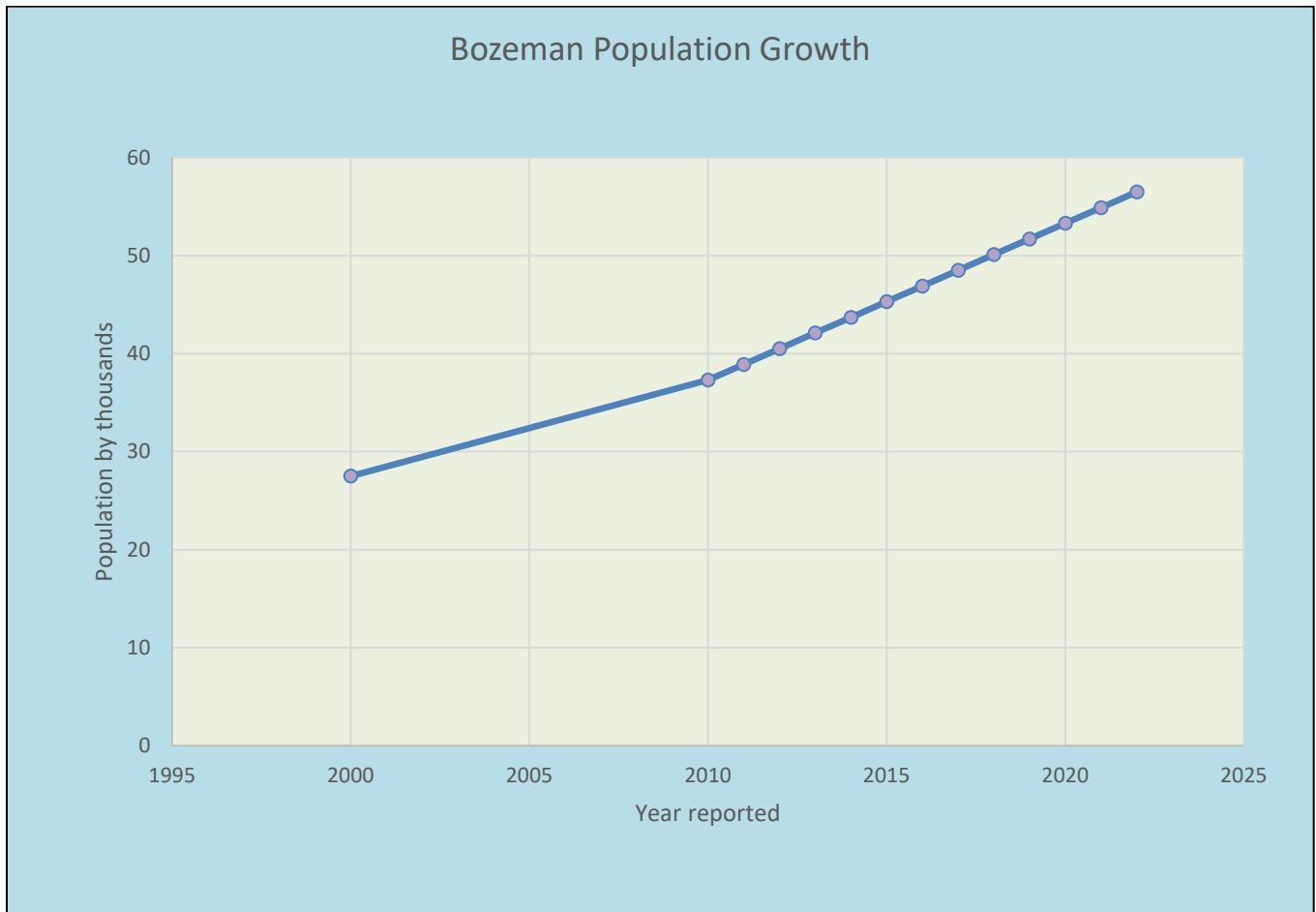
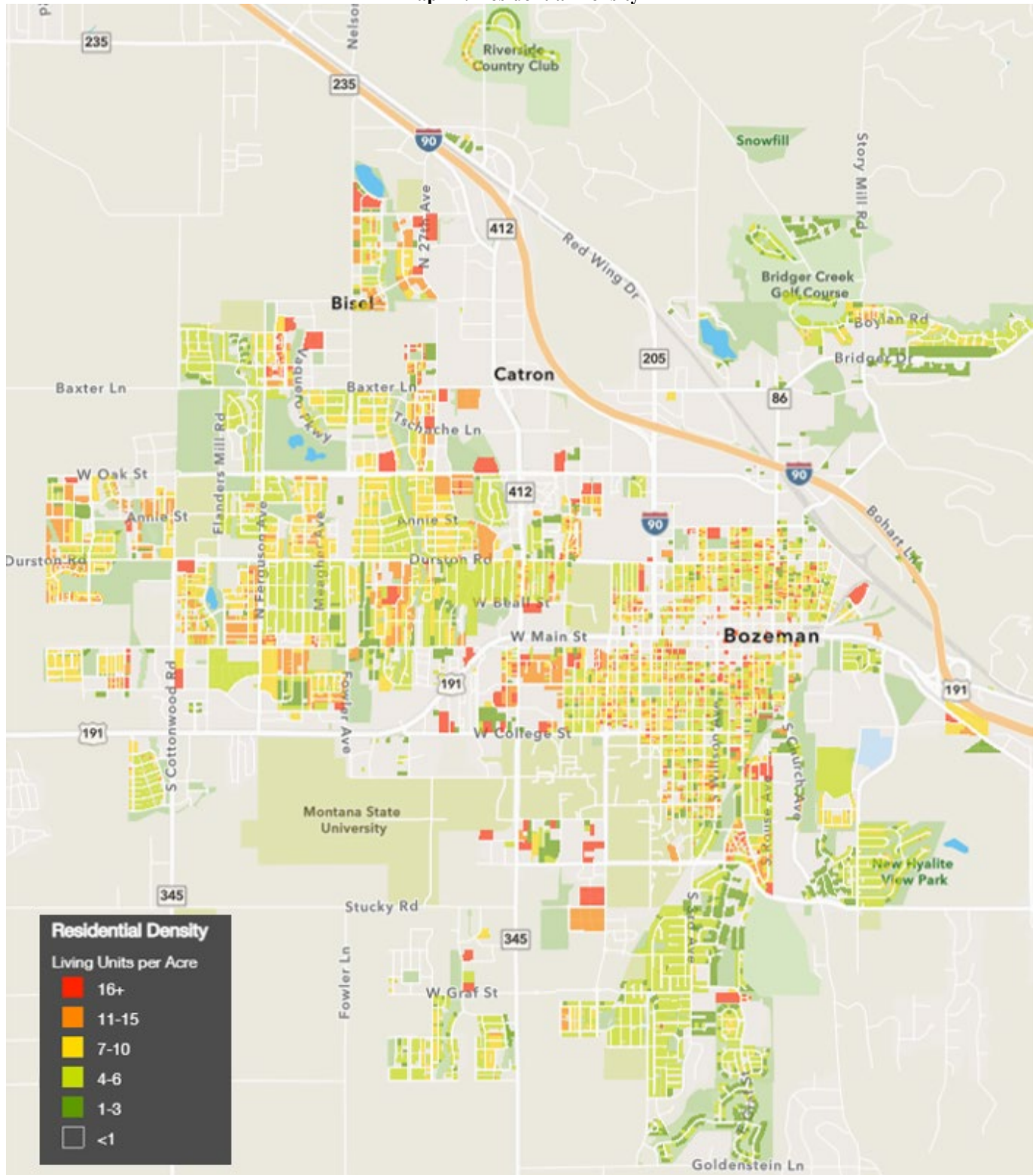


Figure 6: Bozeman Population Growth (2000-2022)

With the increase in population also came a demand for home construction, pushing the supply and demand to record levels, and with that, the cost of new home construction and the rent of various residential homes. The city has also added about 700 housing units annually since 2010, which is just under 60 percent of all housing development in the county but continues to struggle with affordability.

Map 11: Residential Density



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

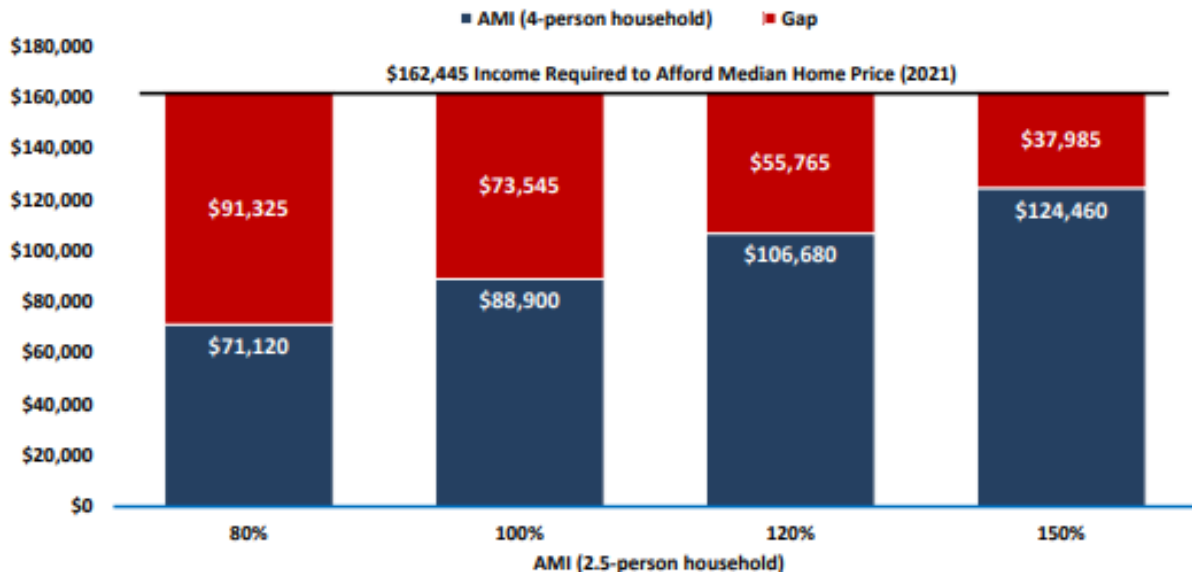


Figure 7: Income Gap for Median Priced Homes  
Source: US Census Bureau

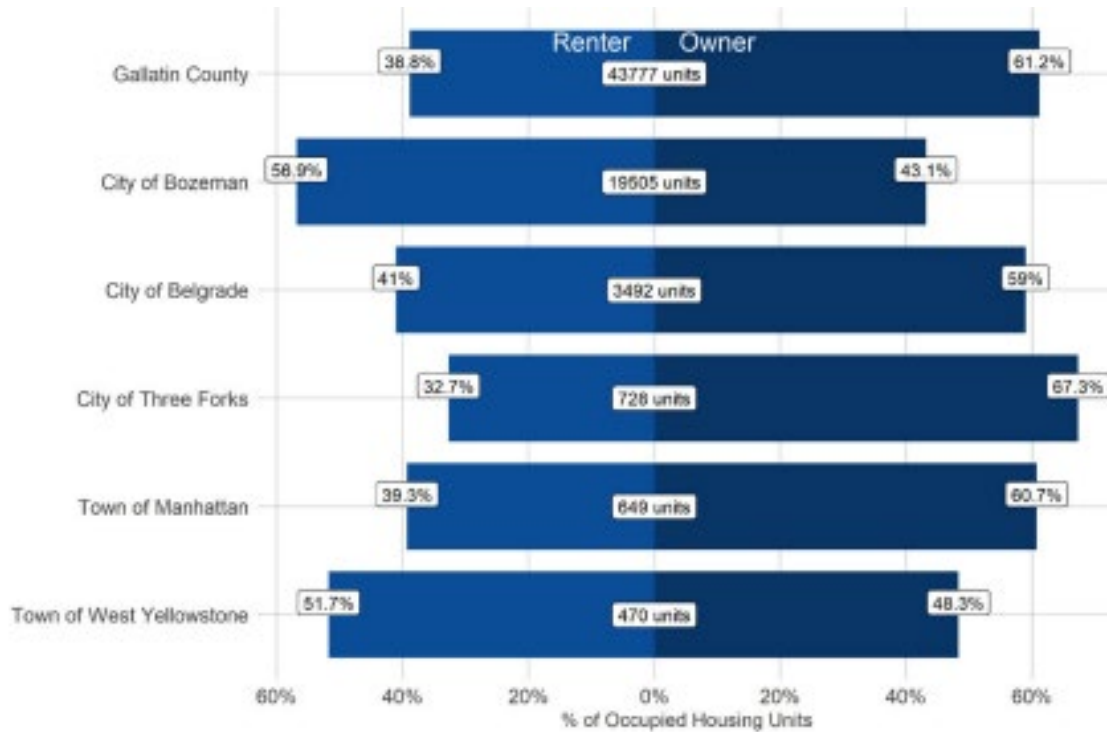
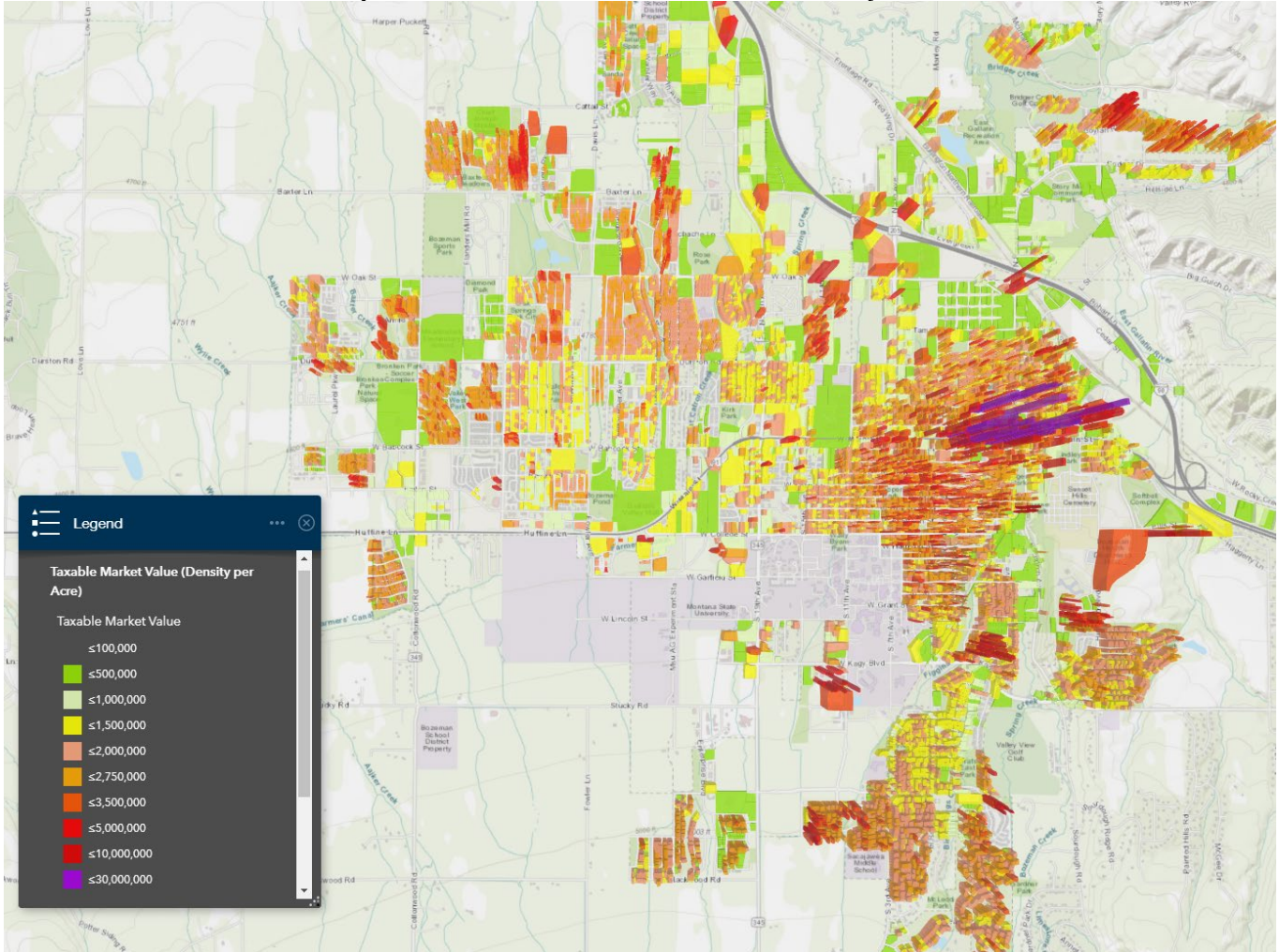


Figure 8: Renter vs Owner in the Gallatin Valley, Gallatin County, Montana  
Source: US Census Bureau

**Map 12: Home Market Values within Bozeman City Limits**

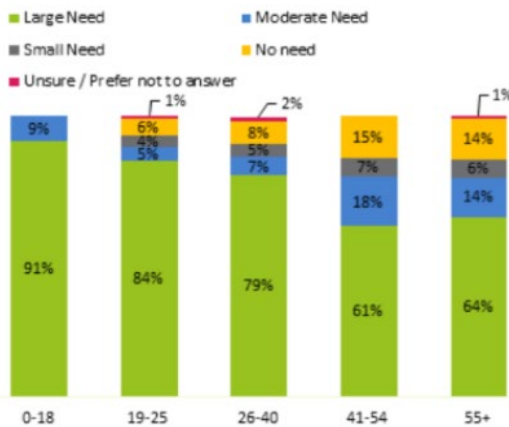


City of Bozeman GIS

■ Large Need ■ Moderate Need ■ No Need ■ Small Need ■ Prefer not to answer / Unsure



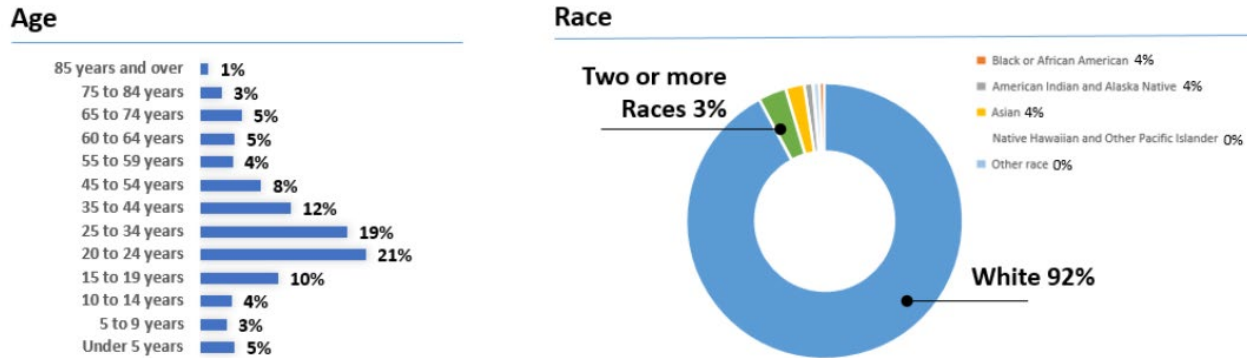
**Need for Affordable Housing by Age**



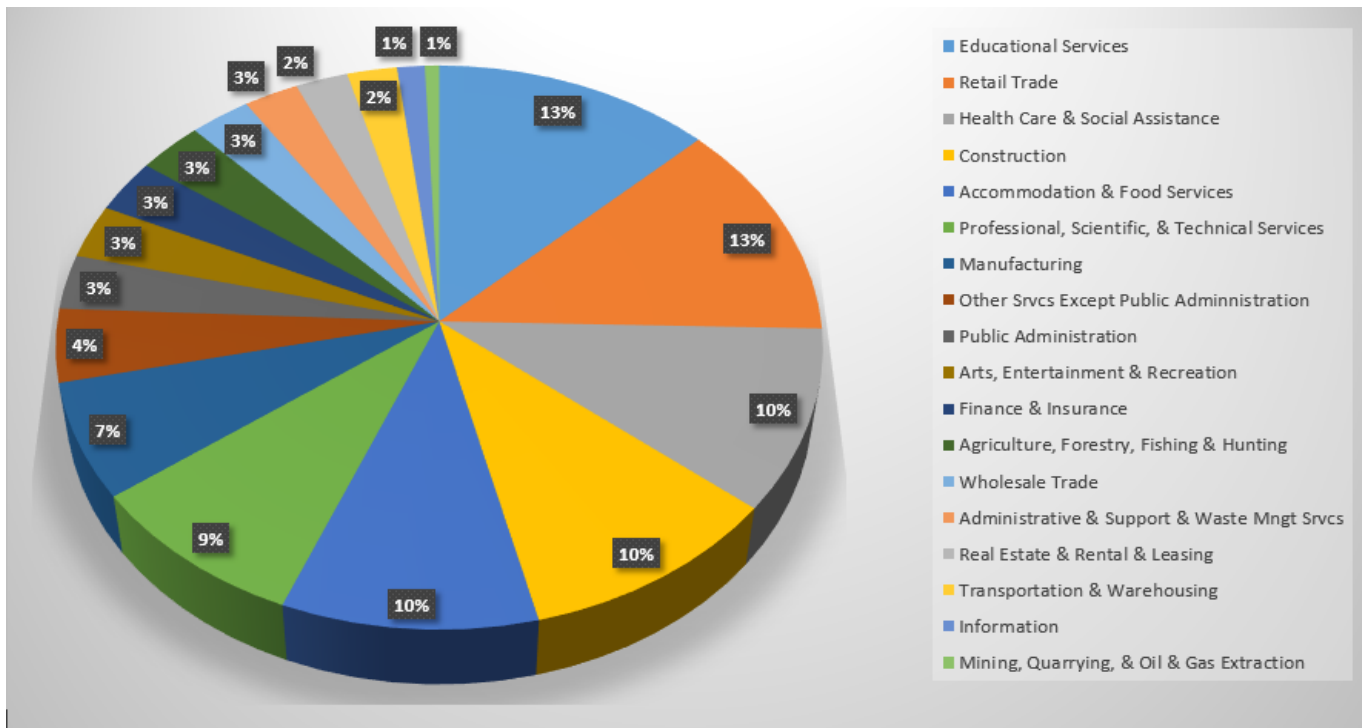
**Figure 9: Affordable Housing**

### Community Demographic Features

The Bozeman Fire Department’s response area is determined by the city limits of Bozeman. The population’s median age is 28.7. The population is highly educated, with the majority of residents employed in the education, health, and retail trade professions. Over 42% of the population earns more than \$100,000 annually.



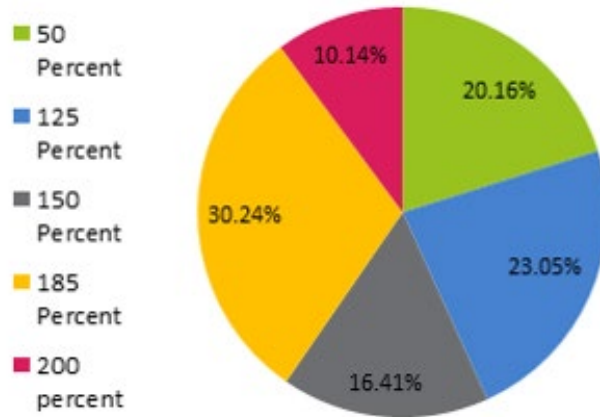
**Figure 10: Bozeman Gender, Age, and Race Demographics**  
Source: Bozeman Gap Analysis



\*Data from Census Bureau 2017

**Figure 11: Industries Located in Bozeman**

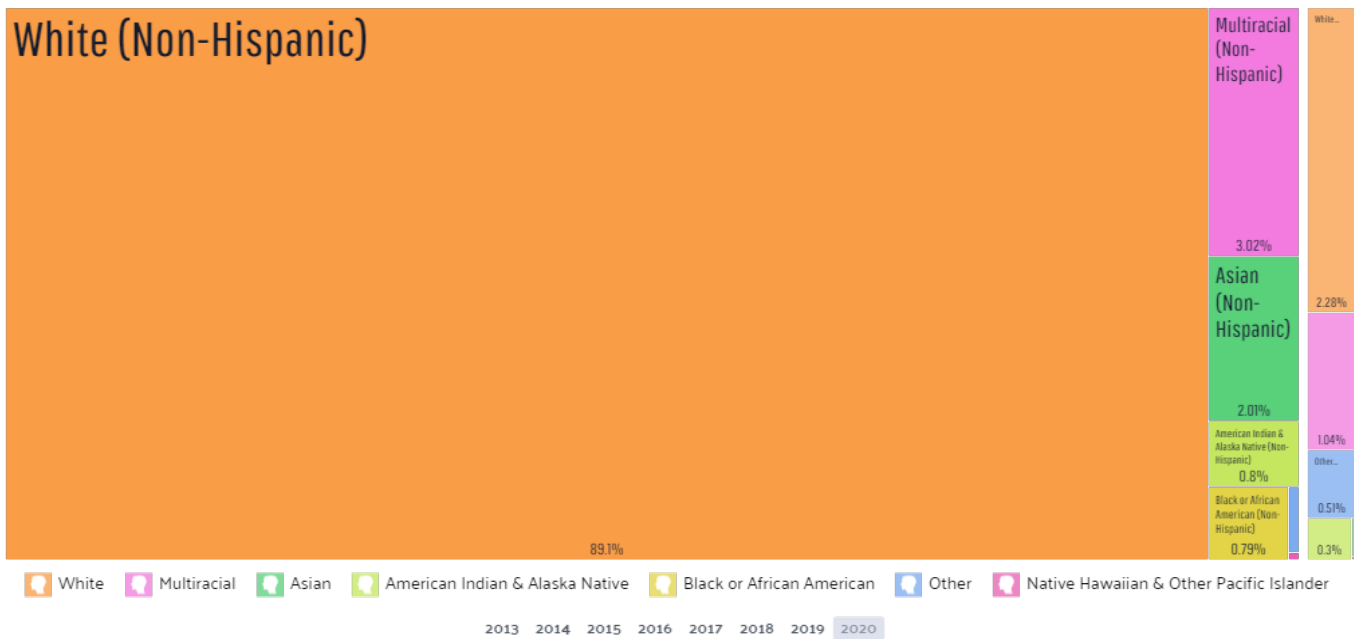
In 2020, the median household income of the 20,500 households in Bozeman grew to \$59,695 from the previous year of \$55,569.



**Figure 12: Families in Bozeman with Income Below 200% of the Federal Poverty Level**

As of 2020, 4.52% of Bozeman residents (2,190 people) were born outside of the United States (compared to 4.46% the year prior), which is lower than the national average of 13.5%.

In 2020, Bozeman had 29.5 times more white (non-Hispanic) residents (43,100 people) than any other race or ethnicity.



**Figure 13: Races Represented in Bozeman**  
Source: U.S. Census Bureau [ACS 5-year Estimate](#).

## B. History of the Agency

### Major Historical Milestones of the Department

The Bozeman Fire Company was formed in 1880, later consisting of the Alpha Hose Company (February 5, 1885) and Bozeman Hook and Ladder (February 1884). The Bozeman Fire Department was organized as a volunteer group with only two paid members.

**December 13, 1889**     Omega Hose Company founded.

**1887**     Large Main Street fire motivated the update of pumping equipment, leading to the purchase of a Silsby steam pumper in 1889.



**1889**     W.G. Alexander succeeded A.P. Clark, the first fire chief, and served in that role until 1925.

**1890** Moved into Bozeman Opera House, which housed City Hall, the fire and police departments until 1964.

**1910** Centralized fire alarm system by Gamewell.

**1914** Moved to all motorized equipment.



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**1912** Bozeman Relief Association was incorporated.

**December 1922** Ernest Robertson line of duty death at Main Street fire.

**February 13, 1939** Firefighters joined IAFF as local 613.

**1955** First ladder truck

**1964** Move to new police and fire station with city hall adjacent to the south.

**1974** Station 2 opened with agreement from MSU.



**1987** Ladder 1 delivery (LTI).

**1989** Pierce Dash pumper delivery.

**1994** Last of volunteer firefighters phased out.

**1997** Regional Hazmat Team designation.

**1998** General pumper delivery (sold in 2012).

**2003** Minimum staffing increased from five to six, allowing for three-person engine companies.





## COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

**2004** Pierce pumper delivery (1989 Pierce moved to reserve), and 1970s Darley gifted to Lewistown Driving School.

**2005** Acquired hazmat response trailer and tow vehicle.

**2009** Station 3 opened at Vaquero and Davis, fully staffed, adding 12 firefighters and increasing minimum staffing to nine.

**2011** Ladder truck moved to front line.

**2009** (March 5<sup>th</sup>) Downtown gas explosion - one killed.

**2010** Sutphen pumper (Engine 2) 2004 Pierce to reserve.

**2011** Sutphen pumper (Engine 1).

**2013** Sutphen Aerial (Truck 3, LTI sold).

**2018** Technical rescue team and trailer put into service.

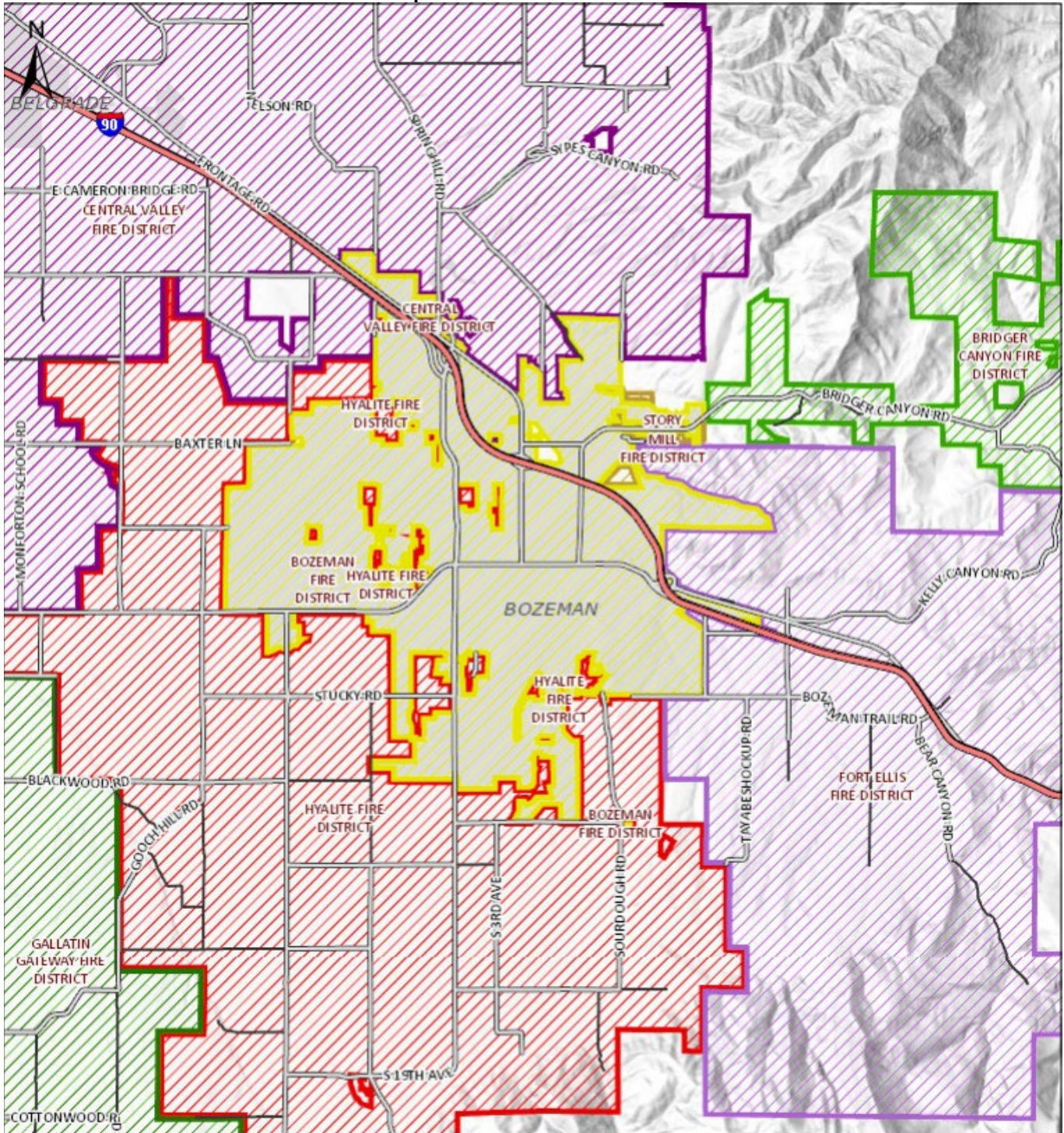
**2022** (September) Move to Bozeman Public Safety Center that houses headquarters fire station, police, courts, and legal services.

**2022** Began billing for EMS transports.



## Current Legal Boundary of Service Area

Map 13: Service Area Boundaries



The legal boundary of the department's service area is contained within the jurisdictional Bozeman city limits, as established by city ordinance. The department also has contractual legal obligations to provide fire and emergency services to the Story Mill Fire District and Montana State University.

The city participates in a countywide automatic dispatching program that selects the closest available aid partner via automatic vehicle location (AVL) technology. The primary aid partners for the Bozeman Fire Department are Central

Valley Fire District (CVFD), located to the north, and the Hyalite Fire District (HFD) located to the south. CVFD and HFD are the only fully staffed aid partners available 24/7/365, thus resulting in these agencies being the primary aid partners. However, this does not exclude surrounding volunteer agencies from being selected for automatic aid responses if needed.

## Current Organization, Divisions, Programs, and Services

The Bozeman Fire Department employs 50 full-time employees. The department is organized into three distinct functional groups. The department's administration is overseen by the fire chief, who manages two deputy chiefs and an executive assistant. Each deputy chief is responsible for an assigned division of the department. The deputy chief of operations oversees the emergency service delivery through the management of three battalion chiefs and one training captain. The deputy chief of prevention is responsible for fire prevention and education services with a staff of three fire inspectors. The deputy chief of prevention also functions as the fire marshal.

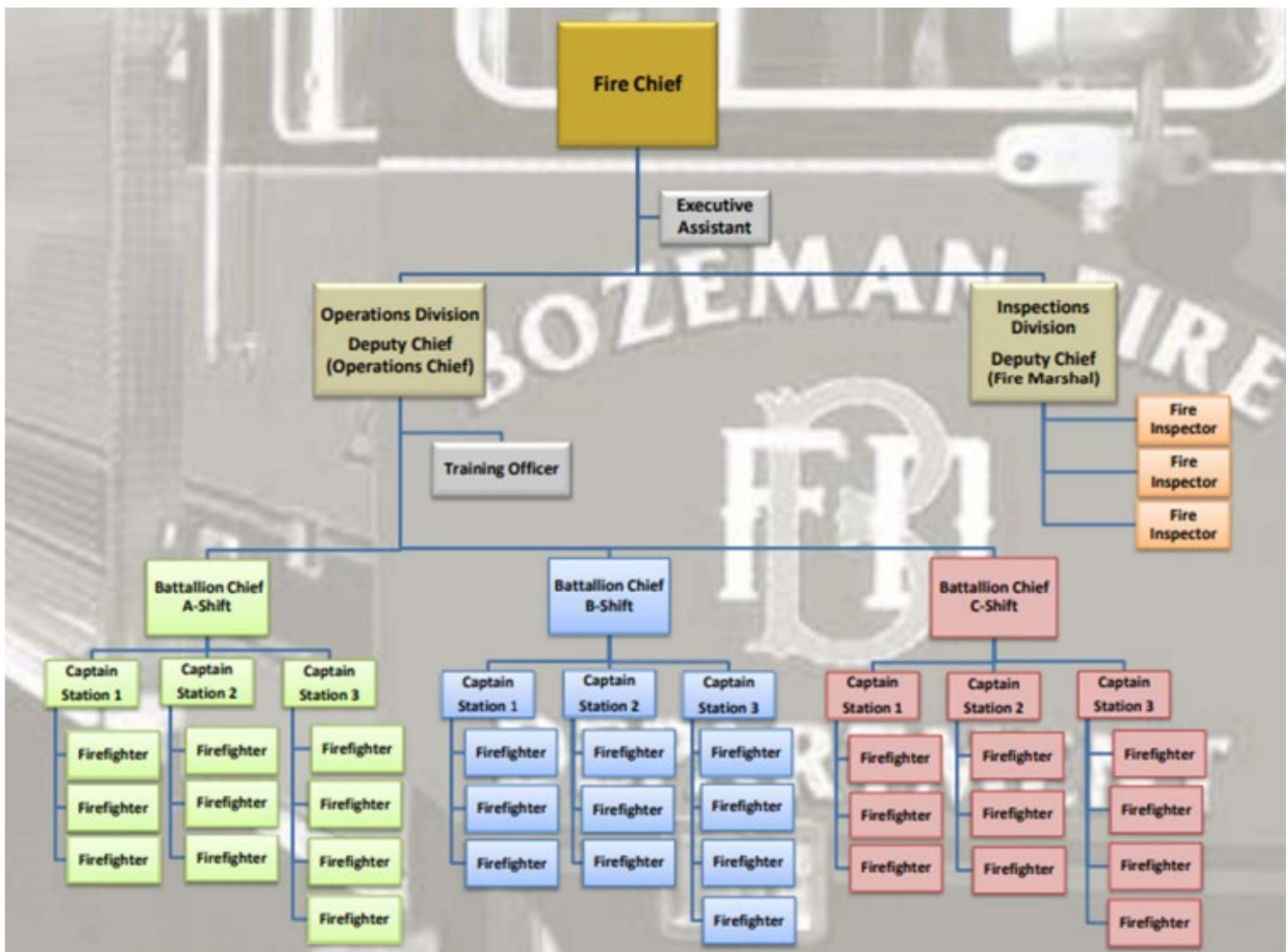


Figure 14: Organizational Chart

### **Administration**

The fire department administration is responsible for all aspects of the fire department's mission. The fire chief delegates authority to subordinates who oversee the operation and delivery of emergency services, and community risk reduction through education, prevention, and investigation. The administrative branch of the fire department coordinates with city staff to provide human resources services, financial planning and budgeting, facility maintenance, information technology, legal counsel, and other fundamental government services.

### **Operations**

The deputy chief of operations is responsible for the execution of fire department emergency services through three battalions (A, B, and C). Each battalion works a 48-hour assignment followed by an off-duty period of 96 hours. The three battalions provide an all-hazards response approach to emergencies and calls for service in the city, mutual aid, and contracted service areas. The deputy chief of operations delegates responsibility to the training captain for the planning and implementation of organizational training to maintain proficiency and certifications needed to fulfill the fire department's mission.

### **Prevention**

The deputy chief of prevention and the staff of three fire inspectors are responsible for the community risk reduction mission of the fire department through fire and life safety inspections, code enforcement, public education, and fire investigation.

## Fire Stations, Training Facilities, Apparatus, Equipment, and Staffing

### Station 1: Bozeman's Public Safety Center

The Bozeman Fire Department's headquarters and public safety center is located at 300 East Oak Street in a building completed in September 2022 to replace the former headquarters station that the department had outgrown. It houses the BFD's administration, fire inspection and prevention division, and the training division. Battalion 1 and Engine 1 also operate from Station 1, staffed full-time with a minimum of four on duty at all times. Other units deploying from the station are a Type 6 brush truck, a back-up ambulance, a technical rescue trailer, and a combination hazardous material and technical rescue heavy-duty tow vehicle. The station has been outfitted with training and conference rooms, decontamination equipment for firefighting equipment, and a shared-use gym.

The building also houses the Bozeman Police Department headquarters, city courts, and other city services.



Station 1 has quick access to several miles of Interstate 90 that runs through the northeast part of Bozeman. The district also includes a thriving downtown business district, light industrial, and several mid-rise hotels.



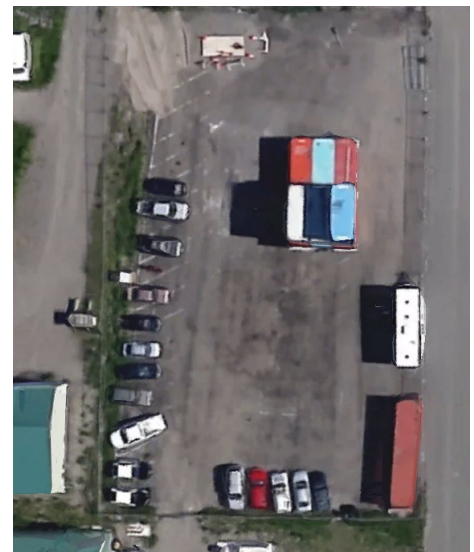
## **Bozeman Fire Station 2**

Station 2 is located at 410 South 19<sup>th</sup> Avenue. The station was built in 1974 and is set to be relocated to a new facility in the Summer of 2024. The current station covers the campus of Montana State University. Engine 2 deploys out of Station 2 with a minimum crew of three personnel. In addition, Engine 4 is housed at Station 2 as a reserve apparatus.



## **Bozeman Fire Station 3 and Gallatin County 911 Dispatch Center**

Station 3 is located at 1705 Vaquero Parkway, in the northwest section of Bozeman. It serves as a joint facility built in 2009 in partnership with Gallatin County Dispatch, functioning as a fire station and a regional dispatch center for Gallatin County. The station houses Truck 3, with a minimum of three personnel, a backup ambulance (Medic 3), a Type 6 brush truck (Brush 3), and a hazardous materials technical response trailer. Station 3's district includes manufacturing, many commercial business districts, several miles of Interstate 90, multiple nursing facilities, and multiple schools.



## **Training Facility**

The BFD's training facility is a half-acre lot on the north end of Bozeman at 1812 North Rouse. It is separated from the rest of the city by Montana Rail Link and has three access roads with rail crossings. The facility is a partially asphalt lot with a container structure, a pavilion, a concrete trench prop, and one fire hydrant.

## C. Current Descriptions of Levels of Service with Delivery Programs

### Fire Suppression

The Bozeman Fire Department (BFD) provides operational response for the control and extinguishment of all fire call types within the Bozeman city limits, contracted response coverage districts such as Story Hills Community, automatic aid for the surrounding fire departments, and mutual aid for unincorporated areas within the city limit boundaries and outlying fire districts. This includes response for fires involving structures, vehicles, vegetation (wildland), rubbish, and any other public or private property involved in fire.

The BFD operates three frontline apparatus for the response to structure fires. Station 1 and Station 2 staff and deploy twin Sutphen pumpers with a minimum staff of three personnel. These pumpers are equipped with pumps capable of 1,500 gallons per minute (gpm) and hold a reserve water tank of 750 gallons. The city maintains an integrated fire hydrant system capable of meeting required fire flows for the majority of the city. Station 3 houses a Sutphen SPH100



tower aerial. This apparatus is also deployed with a minimum of three personnel. It is equipped with a pump capable of producing 2,000 gpm. The tower is intended to provide for rescue operations on area mid-rise buildings and has been equipped to deliver defensive aerial master streams.

The department supports fire operations with a battalion chief who responds out of Station 1 in a GMC Sierra 2500. This unit's primary function is to provide incident command and safety for responding units.

A structure fire call type will require the response of all four of BFD's frontline units: Engines 1 & 3, Truck 2, and Battalion 1. In addition, the department also has automatic aid agreements in place with surrounding fire departments to send an additional fire pumper apparatus to any structure fire call in the city. This initial response accounts for supplying four firefighting apparatus with firefighting crews and one command staff. An American Medical Response (AMR) ambulance will also respond to the initial structure fire call. Additional units may be requested through dispatch by alarm level response or special resource requests.



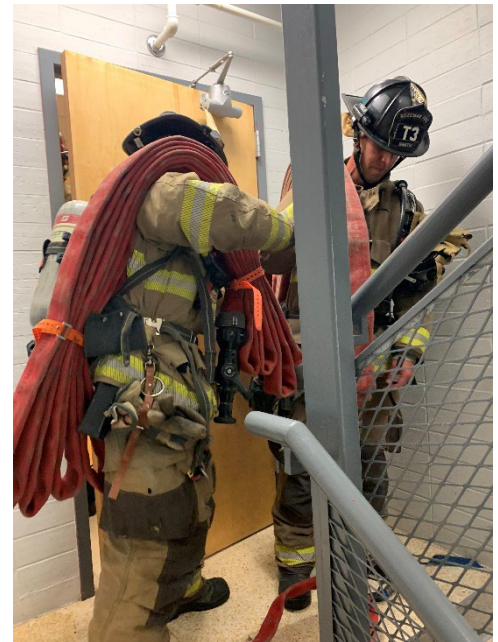


In addition to frontline apparatus, the BFD deploys two Type 6 wildland brush trucks out of stations 1 and 3. These units are cross-staffed and will deploy only on wildland fire calls for service. Bobcat 1, also deploying from station 1, is equipped with a small fire pump and off-road capability to respond to areas inaccessible to the brush trucks. The BFD operates a mobile cascade system and rehab from the hazardous materials tow vehicle. This unit is staffed by backfill personnel and will respond to the fire scene to provide further support. Two pumper apparatus are maintained as reserve units. These units can be staffed by backfill personnel, and they

function as frontline replacement units when service is needed.

Minimum staffing of ten personnel are maintained on duty at all times. These personnel comprise three fire companies with a minimum of three personnel on each company and one additional personnel operating as a battalion chief. All operations personnel are trained to meet the following minimum standards by their position:

- Firefighters hold IFSAC/ProBoard certified Firefighter 1, Firefighter 2, Hazardous Materials Awareness and Operations.
- Engineers hold all certifications of firefighters with the addition of IFSAC/ProBoard Fire Pumper Operator and Aerial Operator certification.
- Fire officers hold all certifications of firefighters with the addition of IFSAC/ProBoard Fire Officer 1, Fire Inspector 1, and Fire Instructor 1. Fire officers are also Blue Card Incident Command certified.
- Chief officers hold all certifications of Fire Officer with the addition of IFSAC/ProBoard Fire Instructor 2, Fire Officer 2, and a Fire Officer designation from the Center of Public Safety Excellence.



## Emergency Medical Services

The Bozeman Fire Department operates at the advanced life support (ALS) transporting level. Highly trained paramedics provide critical pre-hospital invasive procedures, including intubation, intravenous (IV) fluid and medication administration, defibrillation with cardioversion, and external pacing. EMT-intermediates/advanced can provide the same services except for certain drug administration.

ALS equipment includes Life Pack 15 defibrillator/monitors, IV administration kits, blood glucose monitors, narcotics/medications, and intubation kits.

In cooperation with local EMS providers, the BFD can supplement the city's coverage with two ambulance units - Bozeman Medic 1 and Medic 3. If all EMS units are assigned BFD will respond, if available, using one of the two ambulances and provide care and transport to the area's hospital Bozeman Health, a level 3 trauma center.

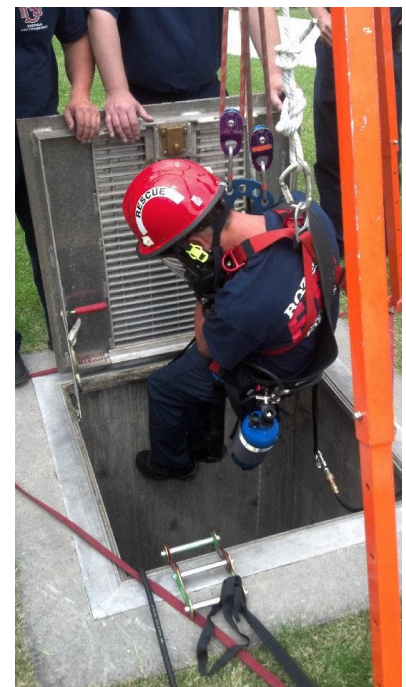


## Technical Rescue

All frontline and reserve apparatus are equipped for vehicle extrication, rope rescue, and ice rescue response using on-duty crews.

All personnel are trained to operations level in trench rescue, confined space, and rope rescue. The Bozeman Fire Department also has a specialized technical rescue team of 18 personnel who participate in monthly training to achieve technician-level certification in rope and confined space rescue.

For complex or extended operations, the department utilizes the combination of on-duty crews and call back of off-duty personnel to meet the needs of the incident. The department has a technical rescue trailer towed by the Haz-Mat 1 Freightliner.



## Hazardous Materials

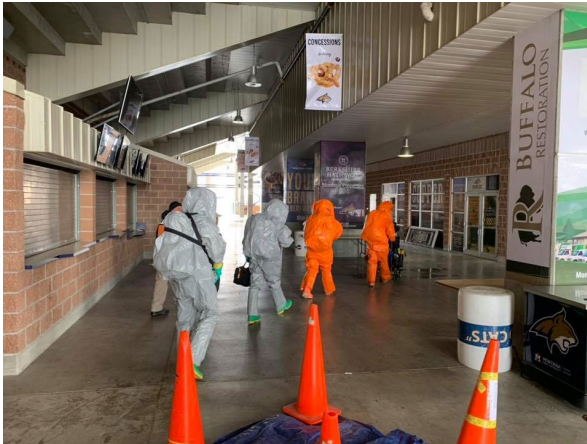


The Bozeman Fire Department/Gallatin County Regional Hazardous Materials Team hazardous materials response consists of a tow vehicle and a tri-axle trailer containing equipment used for full hazmat response. In 2004, the department was selected as one of the six regional hazmat teams for the State of Montana. The team carries equipment for response to chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents and to assist other regional teams at the governor's request, with an active roster of 16 hazardous materials technicians. In 2008, the BFD acquired a single-axle enclosed trailer for waterway spill response in cooperation with the Montana State Department of Environmental Quality.

The BFD maintains operations-level training for department members in day-to-day operations on the engine company level who will initially take a defensive stance, utilizing spill containment, isolation, and possible identification. These steps will then be analyzed to determine the need for a technician response by backfill and full team activation if needed.



The Bozeman Fire Department/Gallatin County Regional Hazardous Materials Team also can activate additional regional teams and/or the Montana National Guard's Civil Support Team through the State of Montana's Hazardous Material Response Plan.

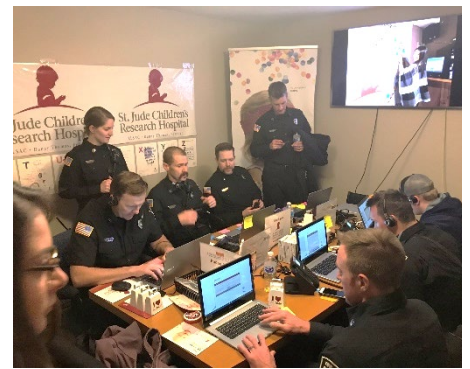


## Community Safety and Remediation Programs

### Fire Prevention

The Bozeman Fire Department Division of Fire Prevention and Public Education (bureau) is devoted to the safety and fire education of the community. The bureau consists of the fire marshal and three nationally certified fire inspectors. The fire inspections bureau conducts all building life safety inspections on new construction projects, remodels, and fire code enforcement. Fire prevention and preplan inspections may be done at the company level with on-duty fire crews under the jurisdiction of the fire marshal.

BFD members also work diligently to be out in the community meeting with area residents and visitors. The department offers a wide variety of prevention and education programs, including free smoke alarm installation, smoke alarm battery replacement, school fire education classes, home escape planning, and car seat installation.



Several different media are utilized to reach the community, including school and business presentations, mass media safety campaigns, station tours for all ages, and an online presence (social media and the department website) to increase awareness of many aspects of fire safety and prevention.

### Occupational Safety and Health Program

This program aims to identify organizational and individual requirements and responsibilities in carrying out a comprehensive safety and health program for employees of the Bozeman Fire Department. This is the basis for rules, regulations, standard operating guidelines, and policies geared primarily toward improving firefighter safety and health. It is specifically established to:

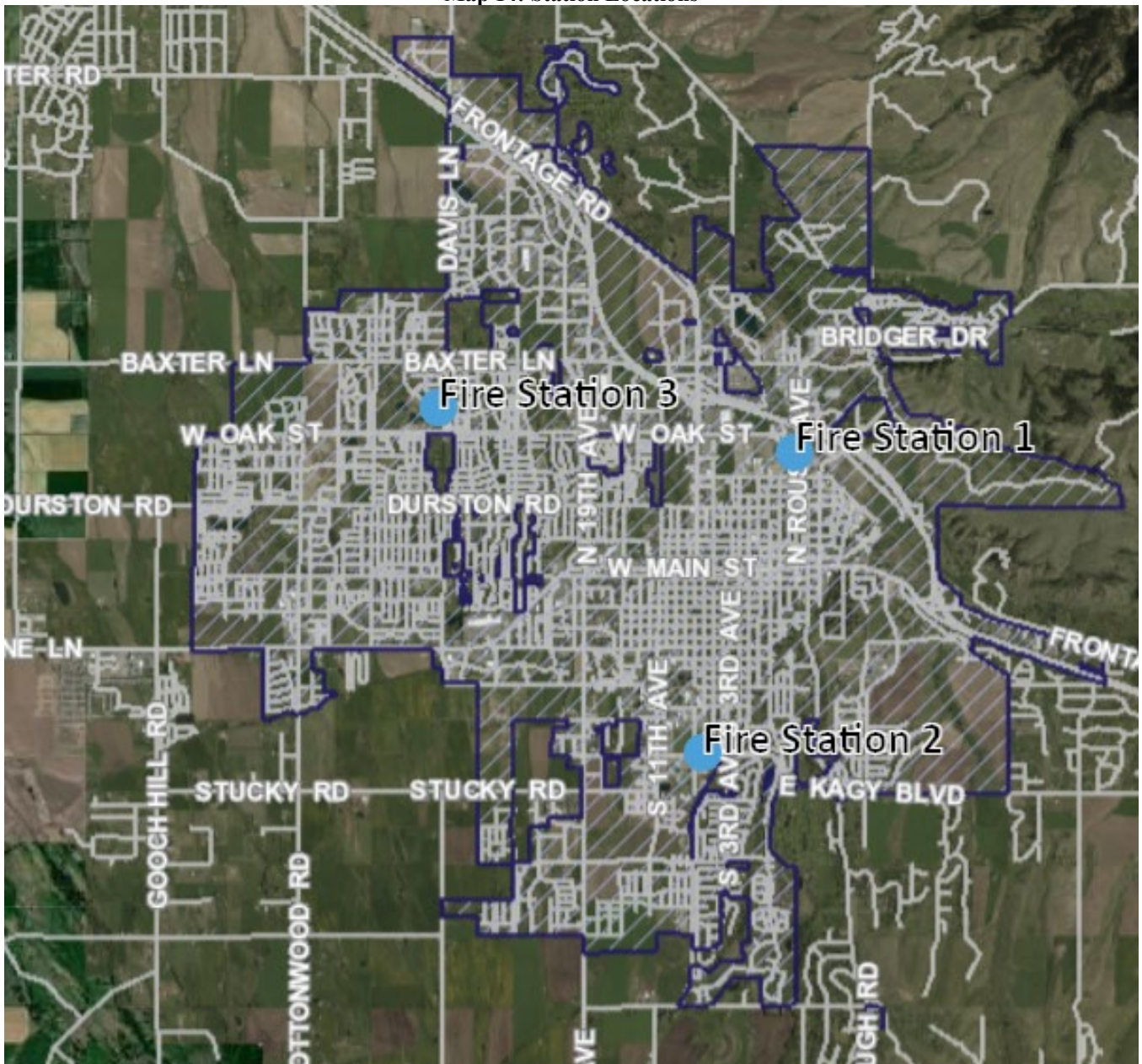
1. Prevent accidents
2. Prevent injuries
3. Reduce exposure to accidents and injuries
4. Reduce the severity of accidents and injuries that do occur
5. Reduce fatalities, illnesses, and disabilities of fire department employees.

**D. Current Deployment and Coverage Areas**

**Points of Service Delivery**

Bozeman Fire Department (BFD) operations are based out of three fire stations strategically located to respond efficiently to areas within Bozeman city limits. Station 1 was relocated in September 2022 and Station 2 will be relocated in the summer of 2024 to minimize response times and provide rapid service delivery to the community. Frontline units are equipped with automatic vehicle location technology, which integrates dispatch information and assigns the closest appropriate unit to the scene. This feature allows for effective call dispatching even while units are out of the station.

**Map 14: Station Locations**







## Minimum Deployment Resources

The Bozeman Fire Department staffs four dedicated 24-hour response apparatus based out of three stations strategically located across the city. Station 1 is BFD headquarters and houses Engine 1 as the fire pumper, Battalion 1 as the staffed command vehicle, and various ancillary response units that are cross-staffed and response capable based on call type. Ancillary apparatus at Station 1 include an ambulance, a Type 6 brush truck, a heavy tow vehicle, a utility terrain vehicle, and a technical rescue equipment trailer. Administration at Station 1 operates during regular business hours Monday through Friday, 8:00 am – 5:00 pm. The station is home to additional command and support staff, including the fire chief, deputy chief of operations, deputy chief of prevention, three fire inspectors, one training captain, and an administrative assistant.

Station 2 is a substation that houses the BFD’s second frontline engine and a reserve engine. Engine 2 is staffed for 24-hour response.

Station 3 is a combined substation and dispatch headquarters. The BFD operates Truck 3 as a staffed apparatus, and cross-staffs a Type 6 brush unit, an additional reserve pumper, an ambulance, and the hazardous materials response trailer.

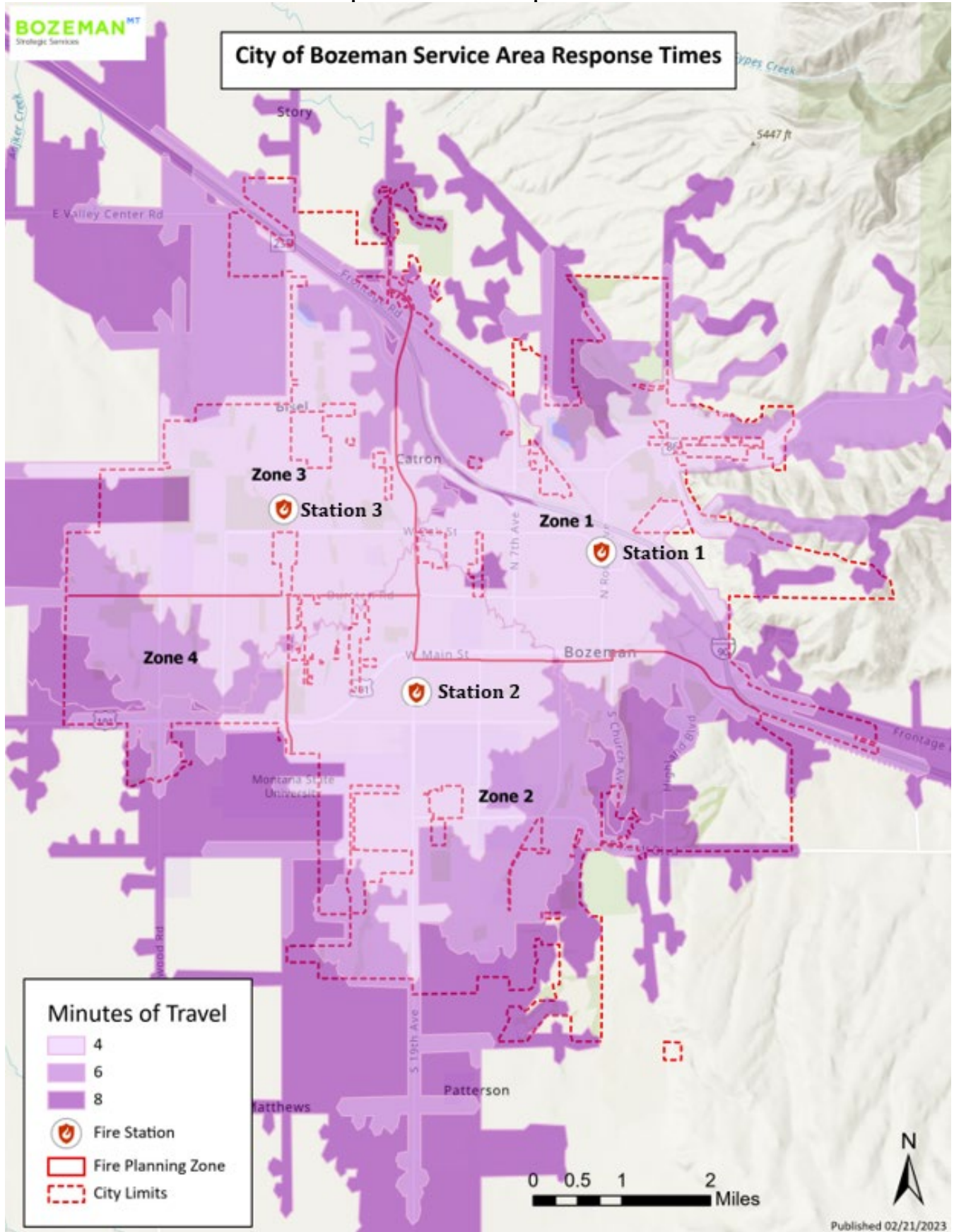
There are 42 frontline response personnel made up of three battalion chiefs, nine captains, nine engineers, and 21 firefighters operating on a rotating three-shift schedule that provides full-time staffing. Staffing minimums for response is three members per station that staff corresponding apparatus, and one battalion chief position. Out of the 42 response personnel, 12 are paramedic-level providers.

			
Station	<b>Fire Station 1</b>	<b>Fire Station 2</b>	<b>Fire Station 3</b>
Address	300 East Oak Street	410 South 19th Avenue	1705 Vaquero Parkway
Apparatus	<ul style="list-style-type: none"> <li>• Engine 1 (staffed with minimum of 3)               <ul style="list-style-type: none"> <li>• Battalion 1 (staffed with 1)                   <ul style="list-style-type: none"> <li>• Medic 1</li> <li>• Brush 1</li> <li>• HazMat 1</li> <li>• Bobcat 1</li> </ul> </li> </ul> </li> <li>• Technical Rescue Trailer</li> <li>• 3 Chief Officer Vehicles</li> <li>• 3 Fire Inspector Vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Engine 2 (Staffed with minimum of 3)               <ul style="list-style-type: none"> <li>• Engine 4</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Truck 3 (Staffed with minimum of 3)               <ul style="list-style-type: none"> <li>• Brush 3</li> <li>• Medic 3</li> </ul> </li> <li>• Hazardous Materials Response Trailer</li> </ul>

**Figure 15: Stations and Apparatus**

# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Map 15: Service Area Response Times



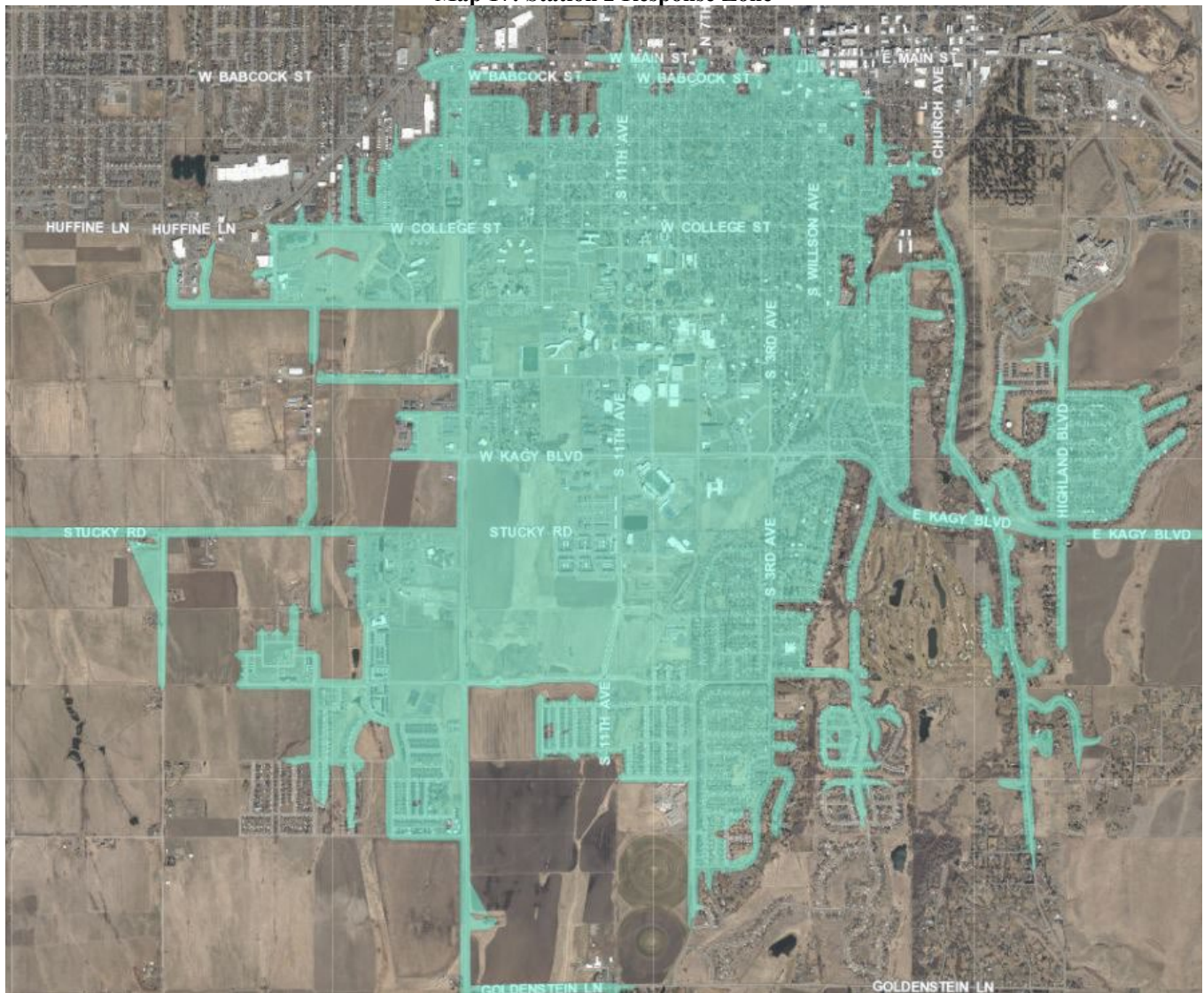




## Station 2

Station 2, located at 575 West Kagy Boulevard, provides coverage to the southeast parts of Bozeman and is the primary response station for Montana State University, the Bozeman Water Treatment Plant, and Bozeman Deaconess Hospital. The south and east boundaries for Station 2 are set by the incorporated city limits. To the north, Station 2 has some overlap with Station 1, with Babcock Street being the geographical break between the two stations. To the west, Fowler Lane and Huffine Lane serve as the geographical break for Station 2.

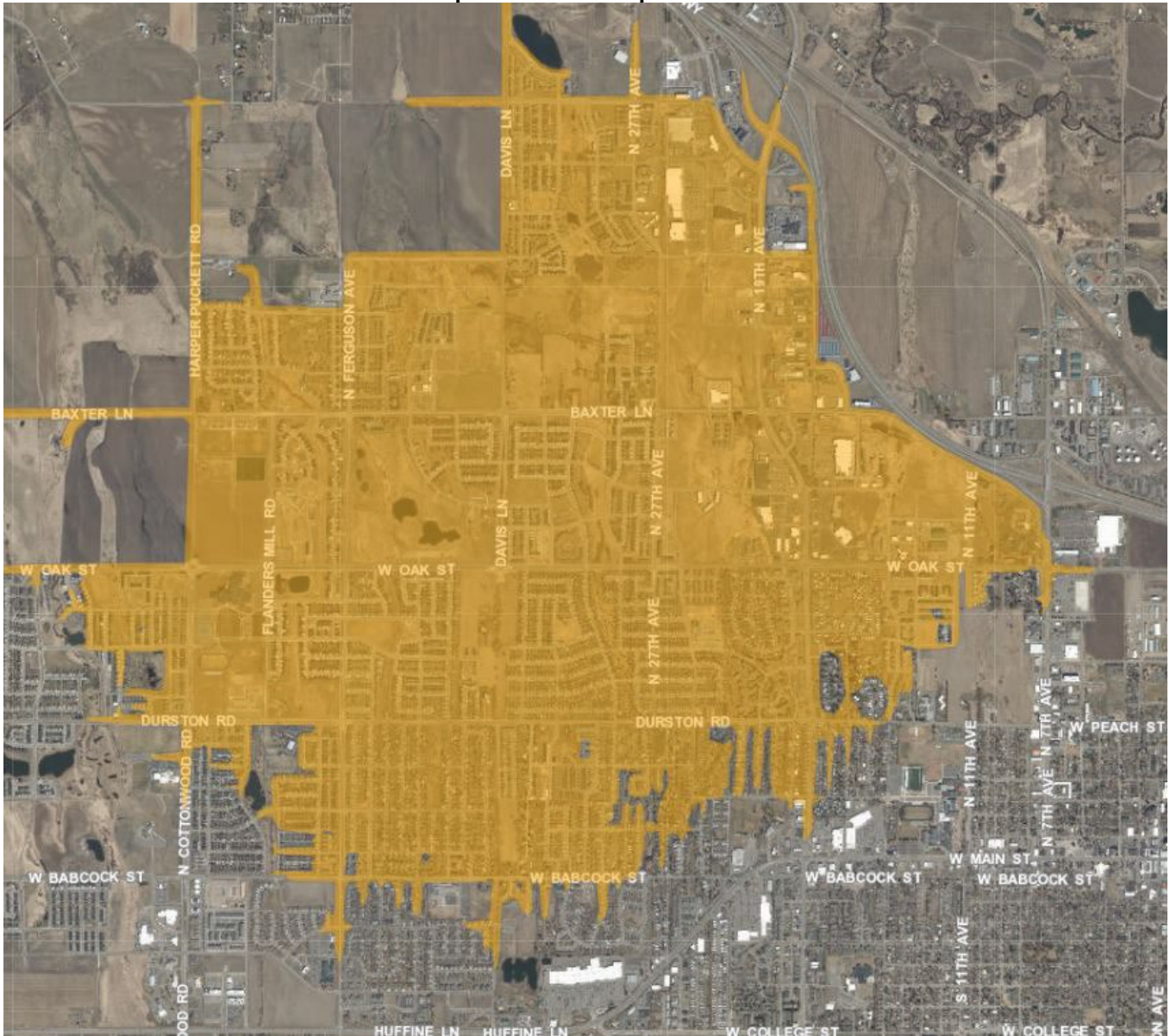
**Map 17: Station 2 Response Zone**



**Station 3**

Station 3, located at 1705 Vaquero Parkway, covers the northwest parts of Bozeman and is the primary response station for Gallatin High School, Chief Joseph Middle School, and the Bozeman Water Reclamation Facility. The north and west boundaries for Station 3 are set by the incorporated city limits. To the east, Station 3 has some overlap with Station 1, with North 19th Avenue being the geographical break between the two stations. To the south, West Babcock Street serves as the geographical break for Station 3.

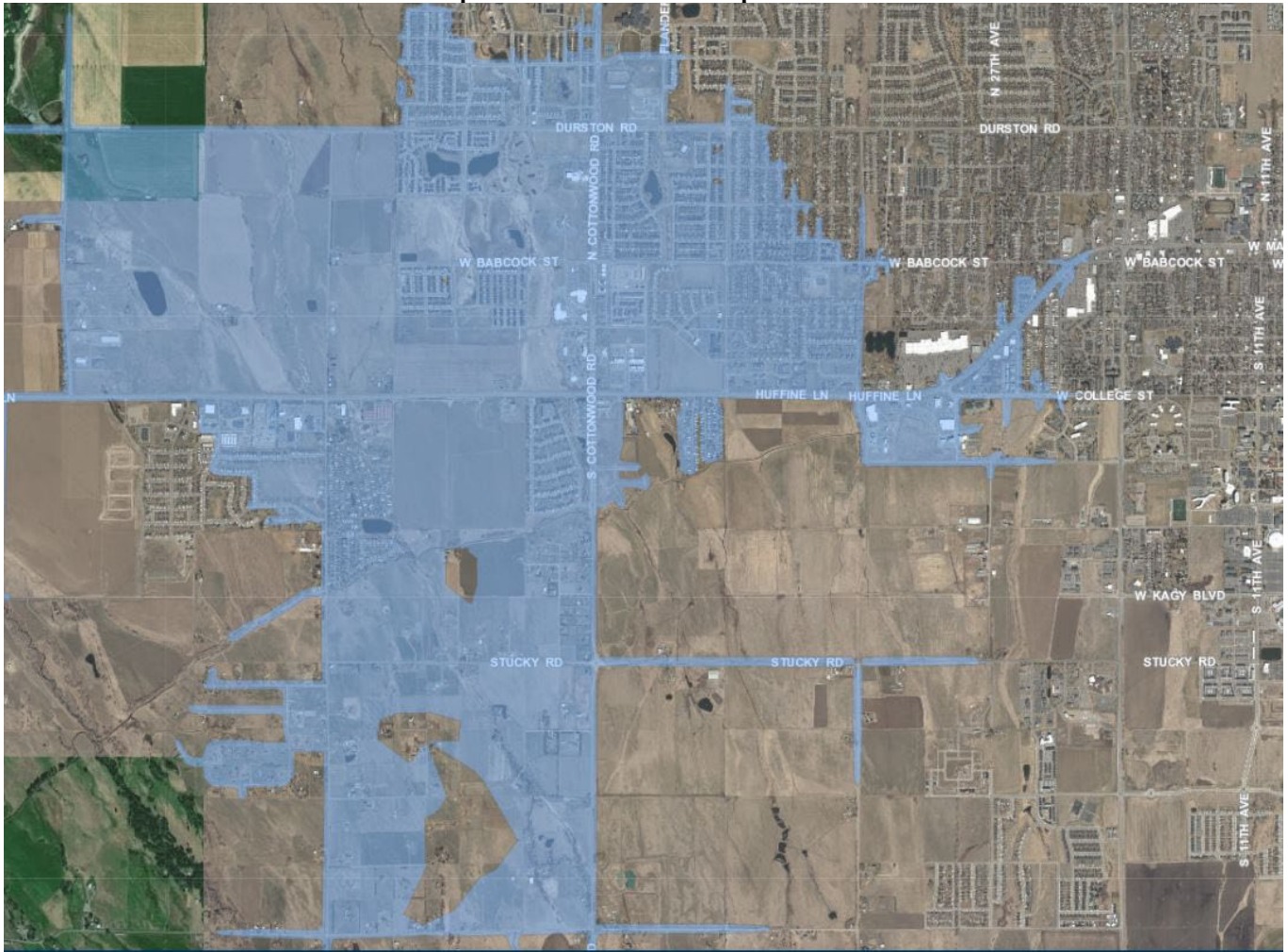
**Map 18: Station 3 Response Zone**



## Future Station 4

The city is currently planning for Station 4 to be located in the area of Fallon Lane and Cottonwood Road. This station would provide coverage to the southwest parts of Bozeman and will be the primary response station for the western development that includes high-density housing and mixed-use commercial. The north and east boundaries for Station 4 will overlap with Stations 2 and 3, with Durston Road, Fowler Avenue, and West Babcock Street serving as the geographical breaks. The western boundary for Station 4 will be set by the incorporated city limits of Bozeman.

**Map 19: Future Station 4 Response Zone**



## E. Summary of Community Response History

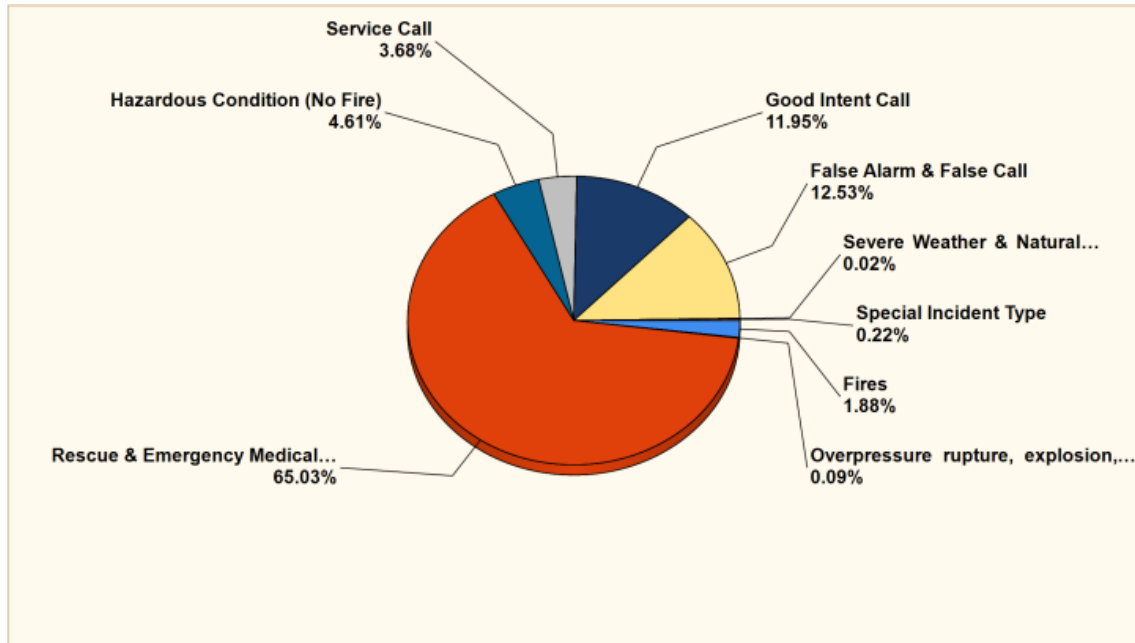


Figure 16: Annual Incident Response Report Data (2020)

MAJOR INCIDENT TYPE	# INCIDENTS	% of TOTAL
Fires	87	1.88%
Overpressure rupture, explosion, overheat - no fire	4	0.09%
Rescue & Emergency Medical Service	3005	65.03%
Hazardous Condition (No Fire)	213	4.61%
Service Call	170	3.68%
Good Intent Call	552	11.95%
False Alarm & False Call	579	12.53%
Severe Weather & Natural Disaster	1	0.02%
Special Incident Type	10	0.22%
<b>TOTAL</b>	<b>4621</b>	<b>100%</b>

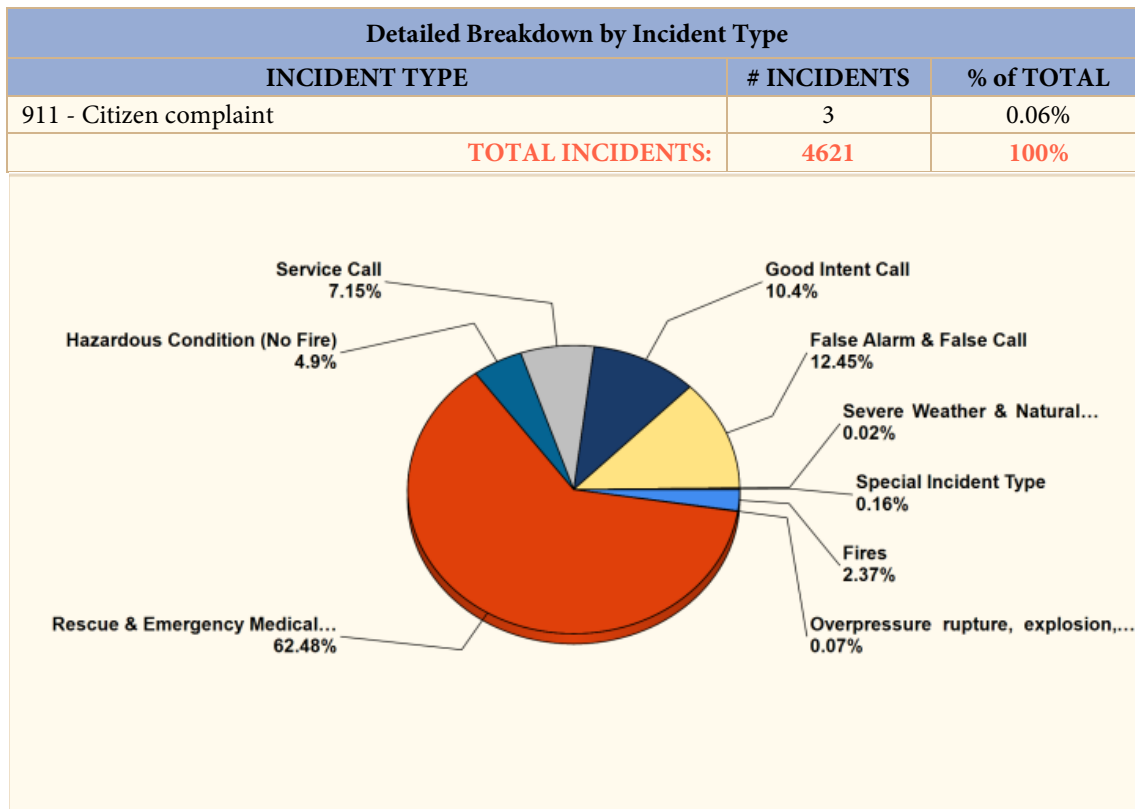
Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
100 - Fire, other	1	0.02%
111 - Building fire	28	0.61%
112 - Fires in structure other than in a building	1	0.02%
113 - Cooking fire, confined to container	6	0.13%
114 - Chimney or flue fire, confined to chimney or flue	1	0.02%
116 - Fuel burner/boiler malfunction, fire confined	1	0.02%
117 - Commercial Compactor fire, confined to rubbish	1	0.02%
118 - Trash or rubbish fire, contained	8	0.17%
121 - Fire in mobile home used as fixed residence	2	0.04%
122 - Fire in motor home, camper, recreational vehicle	1	0.02%
130 - Mobile property (vehicle) fire, other	1	0.02%
131 - Passenger vehicle fire	11	0.24%
132 - Road freight or transport vehicle fire	1	0.02%

## COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
140 - Natural vegetation fire, other	1	0.02%
141 - Forest, woods or wildland fire	2	0.04%
142 - Brush or brush-and-grass mixture fire	2	0.04%
143 - Grass fire	3	0.06%
150 - Outside rubbish fire, other	4	0.09%
151 - Outside rubbish, trash or waste fire	1	0.02%
154 - Dumpster or other outside trash receptacle fire	5	0.11%
160 - Special outside fire, other	2	0.04%
161 - Outside storage fire	1	0.02%
162 - Outside equipment fire	1	0.02%
170 - Cultivated vegetation, crop fire, other	1	0.02%
173 - Cultivated trees or nursery stock fire	1	0.02%
211 - Overpressure rupture of steam pipe or pipeline	1	0.02%
240 - Explosion (no fire), other	1	0.02%
251 - Excessive heat, scorch burns with no ignition	2	0.04%
300 - Rescue, EMS incident, other	6	0.13%
311 - Medical assist, assist EMS crew	669	14.48%
320 - Emergency medical service, other	85	1.84%
321 - EMS call, excluding vehicle accident with injury	1854	40.12%
322 - Motor vehicle accident with injuries	161	3.48%
323 - Motor vehicle/pedestrian accident (MV Ped)	4	0.09%
324 - Motor vehicle accident with no injuries.	207	4.48%
331 - Lock-in (if lock out, use 511)	2	0.04%
341 - Search for person on land	1	0.02%
350 - Extrication, rescue, other	2	0.04%
352 - Extrication of victim(s) from vehicle	3	0.06%
353 - Removal of victim(s) from stalled elevator	7	0.15%
360 - Water & ice-related rescue, other	1	0.02%
381 - Rescue or EMS standby	3	0.06%
400 - Hazardous condition, other	4	0.09%
410 - Combustible/flammable gas/liquid condition, other	12	0.26%
411 - Gasoline or other flammable liquid spill	6	0.13%
412 - Gas leak (natural gas or LPG)	139	3.01%
413 - Oil or other combustible liquid spill	4	0.09%
420 - Toxic condition, other	6	0.13%
421 - Chemical hazard (no spill or leak)	2	0.04%
422 - Chemical spill or leak	4	0.09%
424 - Carbon monoxide incident	12	0.26%
440 - Electrical wiring/equipment problem, other	7	0.15%
441 - Heat from short circuit (wiring), defective/worn	1	0.02%
442 - Overheated motor	1	0.02%
443 - Breakdown of light ballast	1	0.02%
444 - Power line down	5	0.11%
445 - Arcing, shorted electrical equipment	6	0.13%
460 - Accident, potential accident, other	1	0.02%
463 - Vehicle accident, general cleanup	1	0.02%

Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
471 - Explosive, bomb removal (for bomb scare, use 721)	1	0.02%
500 - Service Call, other	50	1.08%
510 - Person in distress, other	5	0.11%
511 - Lock-out	4	0.09%
512 - Ring or jewelry removal	1	0.02%
520 - Water problem, other	2	0.04%
521 - Water evacuation	1	0.02%
522 - Water or steam leak	3	0.06%
531 - Smoke or odor removal	5	0.11%
542 - Animal rescue	3	0.06%
550 - Public service assistance, other	14	0.3%
551 - Assist police or other governmental agency	8	0.17%
552 - Police matter	4	0.09%
553 - Public service	14	0.3%
554 - Assist invalid	55	1.19%
561 - Unauthorized burning	1	0.02%
600 - Good intent call, other	30	0.65%
611 - Dispatched & cancelled en route	412	8.92%
621 - Wrong location	2	0.04%
622 - No incident found on arrival at dispatch address	23	0.5%
631 - Authorized controlled burning	9	0.19%
650 - Steam, other gas mistaken for smoke, other	3	0.06%
651 - Smoke scare, odor of smoke	11	0.24%
652 - Steam, vapor, fog or dust thought to be smoke	2	0.04%
653 - Smoke from barbecue, tar kettle	3	0.06%
661 - EMS call, party transported by non-fire agency	5	0.11%
671 - HazMat release investigation w/no HazMat	52	1.13%
700 - False alarm or false call, other	95	2.06%
710 - Malicious, mischievous false call, other	5	0.11%
711 - Municipal alarm system, malicious false alarm	55	1.19%
712 - Direct tie to FD, malicious false alarm	1	0.02%
715 - Local alarm system, malicious false alarm	4	0.09%
730 - System malfunction, other	22	0.48%
731 - Sprinkler activation due to malfunction	8	0.17%
732 - Extinguishing system activation due to malfunction	1	0.02%
733 - Smoke detector activation due to malfunction	58	1.26%
735 - Alarm system sounded due to malfunction	32	0.69%
736 - CO detector activation due to malfunction	4	0.09%
740 - Unintentional transmission of alarm, other	16	0.35%
741 - Sprinkler activation, no fire - unintentional	12	0.26%
742 - Extinguishing system activation	1	0.02%
743 - Smoke detector activation, no fire - unintentional	118	2.55%
744 - Detector activation, no fire - unintentional	30	0.65%
745 - Alarm system activation, no fire - unintentional	67	1.45%
746 - Carbon monoxide detector activation, no CO	50	1.08%
800 - Severe weather or natural disaster, other	1	0.02%
900 - Special type of incident, other	7	0.15%

# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER



**Figure 17: Annual Incident Response Report Data (2021)**

MAJOR INCIDENT TYPE	# INCIDENTS	% of TOTAL
Fires	103	2.37%
Overpressure rupture, explosion, overheat - no fire	3	0.07%
Rescue & Emergency Medical Service	2716	62.48%
Hazardous Condition (No Fire)	213	4.9%
Service Call	311	7.15%
Good Intent Call	452	10.4%
False Alarm & False Call	541	12.45%
Severe Weather & Natural Disaster	1	0.02%
Special Incident Type	7	0.16%
<b>TOTAL</b>	<b>4347</b>	<b>100%</b>

Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
100 - Fire, other	4	0.09%
111 - Building fire	25	0.58%
112 - Fires in structure other than in a building	2	0.05%
113 - Cooking fire, confined to container	9	0.21%
114 - Chimney or flue fire, confined to chimney or flue	1	0.02%
118 - Trash or rubbish fire, contained	16	0.37%
120 - Fire in mobile prop. used as a fixed struc., other	1	0.02%
121 - Fire in mobile home used as fixed residence	1	0.02%
122 - Fire in motor home, camper, recreational vehicle	2	0.05%
123 - Fire in portable building, fixed location	1	0.02%
131 - Passenger vehicle fire	6	0.14%

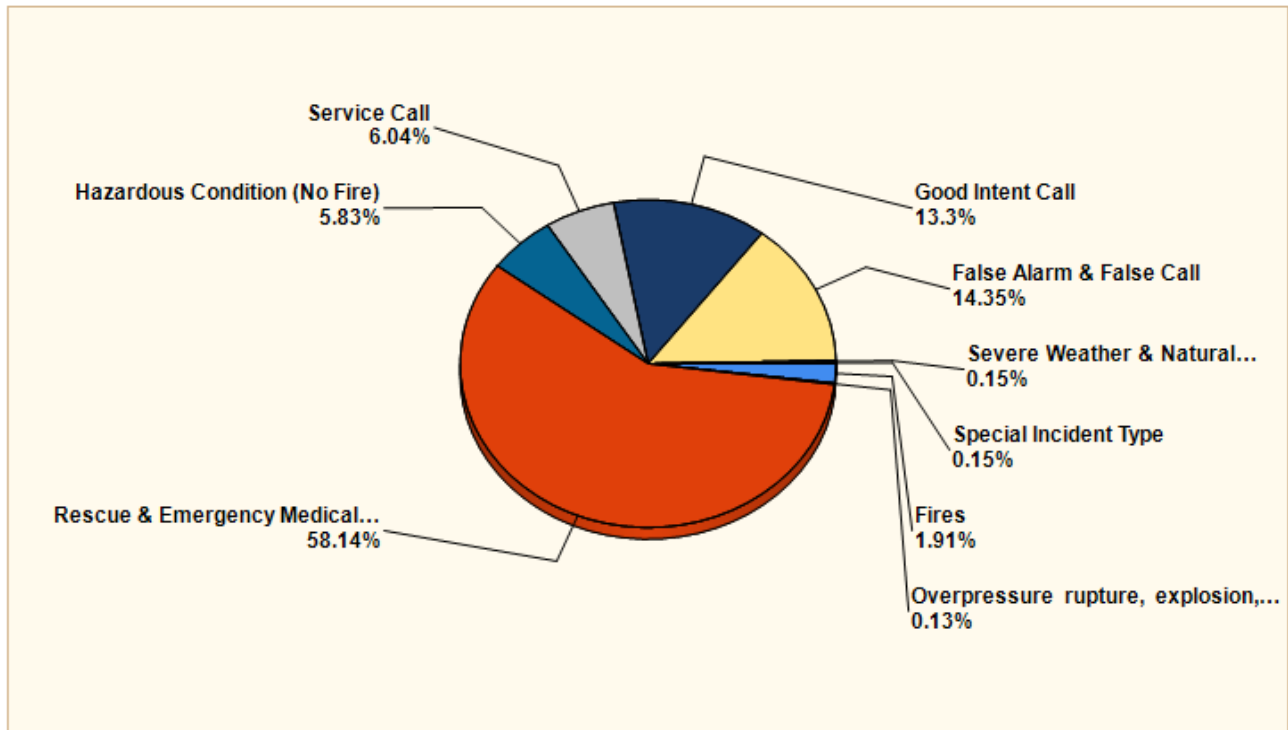
Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
132 - Road freight or transport vehicle fire	1	0.02%
137 - Camper or recreational vehicle (RV) fire	1	0.02%
141 - Forest, woods or wildland fire	4	0.09%
142 - Brush or brush-and-grass mixture fire	2	0.05%
143 - Grass fire	12	0.28%
150 - Outside rubbish fire, other	1	0.02%
151 - Outside rubbish, trash or waste fire	6	0.14%
152 - Garbage dump or sanitary landfill fire	2	0.05%
154 - Dumpster or other outside trash receptacle fire	2	0.05%
162 - Outside equipment fire	2	0.05%
163 - Outside gas or vapor combustion explosion	1	0.02%
170 - Cultivated vegetation, crop fire, other	1	0.02%
200 - Overpressure rupture, explosion, overheat other	1	0.02%
220 - Overpressure rupture from air or gas, other	1	0.02%
251 - Excessive heat, scorch burns with no ignition	1	0.02%
300 - Rescue, EMS incident, other	2	0.05%
311 - Medical assist, assist EMS crew	767	17.64%
320 - Emergency medical service, other	72	1.66%
321 - EMS call, excluding vehicle accident with injury	1438	33.08%
322 - Motor vehicle accident with injuries	172	3.96%
323 - Motor vehicle/pedestrian accident (MV Ped)	7	0.16%
324 - Motor vehicle accident with no injuries.	232	5.34%
331 - Lock-in (if lock out, use 511)	3	0.07%
341 - Search for person on land	1	0.02%
350 - Extrication, rescue, other	2	0.05%
352 - Extrication of victim(s) from vehicle	6	0.14%
353 - Removal of victim(s) from stalled elevator	13	0.3%
355 - Confined space rescue	1	0.02%
400 - Hazardous condition, other	17	0.39%
410 - Combustible/flammable gas/liquid condition, other	16	0.37%
411 - Gasoline or other flammable liquid spill	7	0.16%
412 - Gas leak (natural gas or LPG)	104	2.39%
413 - Oil or other combustible liquid spill	4	0.09%
421 - Chemical hazard (no spill or leak)	2	0.05%
422 - Chemical spill or leak	3	0.07%
423 - Refrigeration leak	1	0.02%
424 - Carbon monoxide incident	13	0.3%
440 - Electrical wiring/equipment problem, other	18	0.41%
442 - Overheated motor	5	0.12%
444 - Power line down	17	0.39%
445 - Arcing, shorted electrical equipment	6	0.14%
500 - Service Call, other	83	1.91%
510 - Person in distress, other	5	0.12%
511 - Lock-out	5	0.12%
512 - Ring or jewelry removal	1	0.02%
520 - Water problem, other	11	0.25%
531 - Smoke or odor removal	14	0.32%



## COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
541 - Animal problem	5	0.12%
542 - Animal rescue	10	0.23%
550 - Public service assistance, other	21	0.48%
551 - Assist police or other governmental agency	10	0.23%
552 - Police matter	3	0.07%
553 - Public service	24	0.55%
554 - Assist invalid	117	2.69%
555 - Defective elevator, no occupants	1	0.02%
561 - Unauthorized burning	1	0.02%
600 - Good intent call, other	27	0.62%
611 - Dispatched & cancelled en route	323	7.43%
621 - Wrong location	2	0.05%
622 - No incident found on arrival at dispatch address	23	0.53%
631 - Authorized controlled burning	3	0.07%
641 - Vicinity alarm (incident in other location)	1	0.02%
650 - Steam, other gas mistaken for smoke, other	3	0.07%
651 - Smoke scare, odor of smoke	21	0.48%
652 - Steam, vapor, fog or dust thought to be smoke	3	0.07%
661 - EMS call, party transported by non-fire agency	4	0.09%
671 - HazMat release investigation w/no HazMat	42	0.97%
700 - False alarm or false call, other	100	2.3%
710 - Malicious, mischievous false call, other	4	0.09%
711 - Municipal alarm system, malicious false alarm	40	0.92%
714 - Central station, malicious false alarm	1	0.02%
715 - Local alarm system, malicious false alarm	3	0.07%
721 - Bomb scare - no bomb	1	0.02%
730 - System malfunction, other	19	0.44%
731 - Sprinkler activation due to malfunction	13	0.3%
732 - Extinguishing system activation due to malfunction	2	0.05%
733 - Smoke detector activation due to malfunction	54	1.24%
735 - Alarm system sounded due to malfunction	34	0.78%
736 - CO detector activation due to malfunction	1	0.02%
740 - Unintentional transmission of alarm, other	29	0.67%
741 - Sprinkler activation, no fire - unintentional	15	0.35%
743 - Smoke detector activation, no fire - unintentional	102	2.35%
744 - Detector activation, no fire - unintentional	18	0.41%
745 - Alarm system activation, no fire - unintentional	71	1.63%
746 - Carbon monoxide detector activation, no CO	34	0.78%
800 - Severe weather or natural disaster, other	1	0.02%
900 - Special type of incident, other	6	0.14%
911 - Citizen complaint	1	0.02%
<b>TOTAL INCIDENTS:</b>	<b>4347</b>	<b>100%</b>

**2022 Incident Response Report**



**Figure 18: Annual Incident Response Report Data (2022)**

MAJOR INCIDENT TYPE	# INCIDENTS	% of TOTAL
Fires	89	1.91%
Overpressure rupture, explosion, overheating - no fire	6	0.13%
Rescue & Emergency Medical Service	2714	58.14%
Hazardous Condition (No Fire)	272	5.83%
Service Call	282	6.04%
Good Intent Call	621	13.3%
False Alarm & False Call	670	14.35%
Severe Weather & Natural Disaster	7	0.15%
Special Incident Type	7	0.15%
<b>TOTAL</b>	<b>4668</b>	<b>100%</b>

Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
100 - Fire, other	2	0.04%
111 - Building fire	23	0.49%
112 - Fires in structure other than in a building	1	0.02%
113 - Cooking fire, confined to container	11	0.24%
114 - Chimney or flue fire, confined to chimney or flue	2	0.04%
116 - Fuel burner/boiler malfunction, fire confined	1	0.02%
118 - Trash or rubbish fire, contained	8	0.17%
121 - Fire in mobile home used as fixed residence	1	0.02%
122 - Fire in motor home, camper, recreational vehicle	2	0.04%
123 - Fire in portable building, fixed location	1	0.02%
130 - Mobile property (vehicle) fire, other	1	0.02%
131 - Passenger vehicle fire	9	0.19%
132 - Road freight or transport vehicle fire	1	0.02%

# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Detailed Breakdown by Incident Type		
INCIDENT TYPE	# INCIDENTS	% of TOTAL
140 - Natural vegetation fire, other	3	0.06%
141 - Forest, woods or wildland fire	1	0.02%
142 - Brush or brush-and-grass mixture fire	2	0.04%
143 - Grass fire	7	0.15%
150 - Outside rubbish fire, other	2	0.04%
151 - Outside rubbish, trash or waste fire	4	0.09%
154 - Dumpster or other outside trash receptacle fire	4	0.09%
160 - Special outside fire, other	2	0.04%
161 - Outside storage fire	1	0.02%
200 - Overpressure rupture, explosion, overheat other	2	0.04%
251 - Excessive heat, scorch burns with no ignition	4	0.09%
300 - Rescue, EMS incident, other	3	0.06%
311 - Medical assist, assist EMS crew	961	20.59%
320 - Emergency medical service, other	84	1.8%
321 - EMS call, excluding vehicle accident with injury	1301	27.87%
322 - Motor vehicle accident with injuries	169	3.62%
323 - Motor vehicle/pedestrian accident (MV Ped)	8	0.17%
324 - Motor vehicle accident with no injuries.	157	3.36%
341 - Search for person on land	2	0.04%
352 - Extrication of victim(s) from vehicle	9	0.19%
353 - Removal of victim(s) from stalled elevator	18	0.39%
371 - Electrocutation or potential electrocutation	2	0.04%
400 - Hazardous condition, other	13	0.28%
410 - Combustible/flammable gas/liquid condition, other	11	0.24%
411 - Gasoline or other flammable liquid spill	12	0.26%
412 - Gas leak (natural gas or LPG)	165	3.53%
413 - Oil or other combustible liquid spill	1	0.02%
420 - Toxic condition, other	1	0.02%
421 - Chemical hazard (no spill or leak)	1	0.02%
422 - Chemical spill or leak	1	0.02%
423 - Refrigeration leak	2	0.04%
424 - Carbon monoxide incident	8	0.17%
440 - Electrical wiring/equipment problem, other	16	0.34%
442 - Overheated motor	2	0.04%
444 - Power line down	24	0.51%
445 - Arcing, shorted electrical equipment	12	0.26%
460 - Accident, potential accident, other	1	0.02%
463 - Vehicle accident, general cleanup	2	0.04%
500 - Service Call, other	77	1.65%
510 - Person in distress, other	10	0.21%
511 - Lock-out	2	0.04%
520 - Water problem, other	16	0.34%
522 - Water or steam leak	9	0.19%
531 - Smoke or odor removal	21	0.45%
540 - Animal problem, other	3	0.06%
542 - Animal rescue	8	0.17%
550 - Public service assistance, other	11	0.24%
551 - Assist police or other governmental agency	8	0.17%
552 - Police matter	4	0.09%

<b>Detailed Breakdown by Incident Type</b>		
<b>INCIDENT TYPE</b>	<b># INCIDENTS</b>	<b>% of TOTAL</b>
553 - Public service	18	0.39%
554 - Assist invalid	92	1.97%
555 - Defective elevator, no occupants	2	0.04%
561 - Unauthorized burning	1	0.02%
600 - Good intent call, other	31	0.66%
611 - Dispatched & cancelled en route	500	10.71%
621 - Wrong location	2	0.04%
622 - No incident found on arrival at dispatch address	30	0.64%
631 - Authorized controlled burning	3	0.06%
650 - Steam, other gas mistaken for smoke, other	1	0.02%
651 - Smoke scare, odor of smoke	18	0.39%
652 - Steam, vapor, fog or dust thought to be smoke	2	0.04%
653 - Smoke from barbecue, tar kettle	1	0.02%
661 - EMS call, party transported by non-fire agency	6	0.13%
671 - HazMat release investigation w/no HazMat	26	0.56%
672 - Biological hazard investigation, none found	1	0.02%
700 - False alarm or false call, other	134	2.87%
710 - Malicious, mischievous false call, other	8	0.17%
711 - Municipal alarm system, malicious false alarm	34	0.73%
713 - Telephone, malicious false alarm	1	0.02%
715 - Local alarm system, malicious false alarm	2	0.04%
730 - System malfunction, other	19	0.41%
731 - Sprinkler activation due to malfunction	30	0.64%
732 - Extinguishing system activation due to malfunction	2	0.04%
733 - Smoke detector activation due to malfunction	33	0.71%
734 - Heat detector activation due to malfunction	2	0.04%
735 - Alarm system sounded due to malfunction	71	1.52%
736 - CO detector activation due to malfunction	9	0.19%
740 - Unintentional transmission of alarm, other	20	0.43%
741 - Sprinkler activation, no fire - unintentional	23	0.49%
743 - Smoke detector activation, no fire - unintentional	92	1.97%
744 - Detector activation, no fire - unintentional	26	0.56%
745 - Alarm system activation, no fire - unintentional	111	2.38%
746 - Carbon monoxide detector activation, no CO	53	1.14%
800 - Severe weather or natural disaster, other	7	0.15%
900 - Special type of incident, other	5	0.11%
911 - Citizen complaint	2	0.04%
<b>TOTAL INCIDENTS:</b>	<b>4668</b>	<b>100%</b>

## F. Community Priorities, Expectations, and Performance Goals

### Mission Statement

As part of the Bozeman Fire Department's (BFD) 2017 strategic planning process, a committee was formed to develop a mission statement, core values, and vision. The mission, values, and vision were adopted in 2018. The following is the result of committee work that concluded in 2017:

#### Mission Statement:

“Problem solving through professionalism and compassionate service since 1884.”

#### Vision Statement:

“We will provide exceptional service as a unified team to promote a professional department that grows with the community.”

#### Values:

“Excellence and Integrity”

### Community Service Priorities

On November 30, 2022, a community meeting was held with the stakeholders of the Bozeman Fire Department to establish a representative baseline of feedback regarding the organization. The meeting was facilitated by a representative from the Center for Public Safety Excellence. Feedback was provided through instruments utilized in the meeting where stakeholders voted on and prioritized fire department programs and services, prioritized community expectations and concerns in their own words, and indicated perceived strengths. The input themes, weighted ranking and values received from that meeting are presented on the following pages. The department solicited feedback and input from a diverse demographic representation of community stakeholders and received 15 respondents.

The purpose of gathering feedback from the community runs parallel to a business collecting feedback from its customers. The governmental entity, like a business, cannot operate efficiently and effectively without understanding the expectations, concerns, and needs of its customer base.

The methodology employed and the findings from the responses provided by the community participants are provided herein. When analyzing the received feedback, priority and thematic approaches were used to get to the heart of what is most important to the community respondents. While all responses in the raw data form are important, the analysis brings to the forefront an understanding and focus for the agency. It is important to note that all feedback from the community is important as it applies to various areas of the department. The department is best served by conducting greater internal analyses of the provided feedback to formulate future objectives and strategies for continuous improvement.

## Methodology and Findings

### Program and Service Prioritization

Participants were provided with an instrument to determine the prioritization of the identified nine core programs and services provided by BFD. In the survey, participants were asked to complete a “direct comparison” between two different services as to which, in the participants' mind, takes priority in each specific comparison. Each service is directly compared to another service, and continues until all services are compared to all others. Responses were then tabulated to formulate the combined stakeholder result shown in the table below. This quantitative and cumulative approach provides the department with a numerical prioritization ranking. It is understood that this snapshot of information contains some bias as to the specific respondents. Additionally, it is understood that using the prioritization matrix provides greater statistical significance.

The priorities of the programs and services as provided by the community respondents are as follows:

**Table 3: Program and Service Priorities Identified by Community Stakeholders**

Programs	Ranking	Score
Fire Suppression Program	1	89
Emergency Medical Services Program	2	79
Technical Rescue Program	3	71
Hazardous Materials Mitigation Program	4	55
Emergency Management Program	5	43
Fire Prevention Program	5	43
Fire Public Education Program	6	20
Fire Investigation, Origin, and Cause Program	6	20

### Community Service Expectations and Concerns

Understanding what the community expects of its fire service organization is critically important to developing a long-range perspective. With this knowledge, internal emphasis may need to be changed or bolstered to fulfill the community's needs.

Respondents were asked to list, in priority order, up to five subjects relative to their expectations of BFD. Responses were then analyzed for themes and weighted. The weighting of the prioritized responses was as follows: if it was the respondent’s first entry, it received five points. Weighting gradually decreased so that if it was the respondent’s fifth entry, it received one point. The weighted themes were then sorted from the highest to the lowest cumulative score.

Within the results the numbers in the parentheses are the cumulative weighted value that correlate with the theme identified. While the themes are listed in prioritized and weighted order, all responses were important in the planning process.

The following are the expectations of the community stakeholders:

1. **Response Times.** Fast/timely response to emergencies. Timely response to all emergency situations (fire, first responders, HazMat). To provide timely response to fire and EMS calls for service response time should be quick. (53)
2. **Fire Department Operations.** Respond when needed with appropriate resources (labor and equipment). Efficiency of operations. Lean into priorities getting most attention and focus to the top priorities. Support of emergency operations with equipment and expertise. Efficient, fast-acting, trained team members. (22)
3. **Local and Regional Coordination.** Ability to communicate and cooperate with other related agencies and first responders. Mutual aid. Coordination with, building department support, to healthcare facilities with tours, review of fire plans, and a mutual communication to make sure we are prepared. Willingness to assist first responder partners, even with mission creep. Operate regionally. (10)
4. **Community Relations.** Be visible in the community. Community reputation. Community connection, a stake in the community being served. (9)

Respondents were also asked to list, in priority order, up to five concerns they have about or for the department. Responses were then analyzed for themes and weighted. The weighting of the prioritized concerns was as follows: if it was the respondent's first entry, it received five points. Weighting gradually decreased so that if it was the respondent's fifth entry, it received one point. The weighted themes were then sorted from the highest to the lowest cumulative weight. The results are presented with the following format. The numbers in the parentheses are the cumulative weighted value that correlate with the theme identified. While the themes are listed in prioritized and weighted order, all responses were important in the planning process. The following are the concerns of the community stakeholders prioritized and weighted accordingly:

1. **Staffing.** Adequate staffing. The ability to hire, train, and retain staffing levels to meet the growing community needs, especially considering the cost of living in Bozeman. Will they be able to handle increase in requests for services with staffing? Staffing levels – are they able to handle the emergency needs of a growing community? Adequate staffing. Seem to need more inspection personnel. (22)
2. **Community Growth.** Ability to keep up with growing demand. Will there be enough time to expand resources as community grows/community need grows. Concerned for our fire department regarding the recent growth of our community – are we providing the resources they need? (13)
3. **Adequate Funding.** Enough funding for labor and equipment. The continued funding to meet the needs of a growing community to meet the expectations listed. Funding. (13)

## Historical Performance Goals

The BFD has historically had two goals. The first is to obtain a six-minute response time to emergent incidents – 60 seconds for call processing, 60 seconds for turnout times, and 240 seconds for travel time. The second goal of the BFD has been for each line personnel to achieve a minimum of 240 training hours per calendar year.

## G. Community Risk Assessment and Risk Levels

### Risk Assessment Methodology

#### Probability/Consequence/Impact of Event Risk

On January 6, 2023, the Bozeman Fire Department (BFD) Accreditation Team conducted a risk assessment of response districts. Risk was evaluated using the tri-axial measurement consisting of probability (Y-Axis), consequence (X-Axis), and impact (Z-Axis). This model utilized Heron’s formula to produce a measurable value to risk based upon numbered values on each axis in the formula.

Probability is the likelihood of an event occurring. The following table shows the numerical values assigned based on data from the years 2020-2022.

PROBABILITY	
2	Annually / 0-3 events per year
4	Quarterly / 4-12 events per year
6	Monthly / 13-26 events per year
8	Weekly / 27-182 events per year
10	Daily / 183+ events per year

Consequence is how the event affects the community and citizens. The following table shows the numerical values assigned based on data from the years 2020-2022.

CONSEQUENCE	
2	Single person or vehicle
4	2-4 people / single residential
6	4+ people / single residential with exposure / 3+ vehicles
8	Multi-residential or commercial
10	MCI / target hazard / critical infrastructure

Impact is the degree to which it affects the BFD’s ability to respond to other events. The following table shows the numerical values assigned based on data from the years 2020-2022.

IMPACT	
2	Critical tasks requiring 3 responders or less (Minor Severity)
4	Critical tasks requiring 4-7 responders (Moderate Severity)
6	Critical tasks requiring 8-12 responders (Significant Severity)
8	Critical tasks requiring 13-20 responders (Critical Severity)
10	Critical tasks requiring 21+ responders (Area max deploy required, extraordinary circumstances)

The three axes (probability, consequence, and impact) were assigned a numeral value ranging from 2 to 10, where 2 represents a low risk and 10 represents maximum risk. Each value was represented on the axis as a point and, when all points were combined, resulted in a numerical value that could be measured to determine the overall risk score for that event.



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

All event types were evaluated and scored by the fire chief, accreditation manager, deputy chief of operations, a battalion chief, and a captain.

## Example 1

Below is an example of an EMS call and its risk score. A basic life support EMS call has the probability of occurring daily (score=10). The consequence to the community is low, only affecting one person (score=2). The impact on the BFD is also low because it only takes one unit out of service (impact=2). The smaller the footprint, the lower risk it poses to the community.

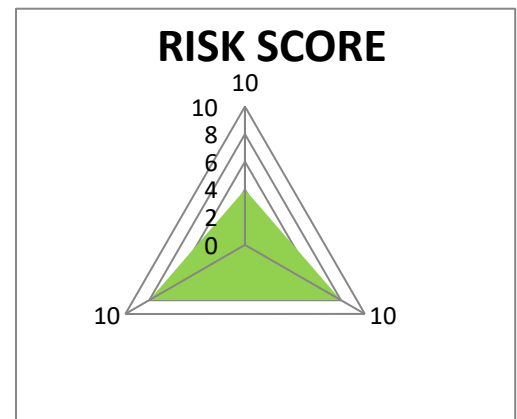
Minor Severity	
<b>RISK</b>	
Probability of occurrence	<b>10</b>
Consequence to community	<b>2</b>
Impact on Fire Department	<b>2</b>
<b>SCORE</b>	<b>20.19901</b>



## Example 2

Below is an example of a multi-residential structure fire and its risk score. This event has the probability of occurring quarterly (score=4). The consequence to the community is high, affecting multiple citizens (score=8). The impact on the BFD is critical because it takes every BFD unit out of service and depletes aid partners of their resources (impact=8). The larger the footprint, the higher the risk to the community.

Critical Severity	
<b>RISK</b>	
Probability of occurrence	<b>4</b>
Consequence to community	<b>8</b>
Impact on Fire Department	<b>8</b>
<b>SCORE</b>	<b>55.42563</b>

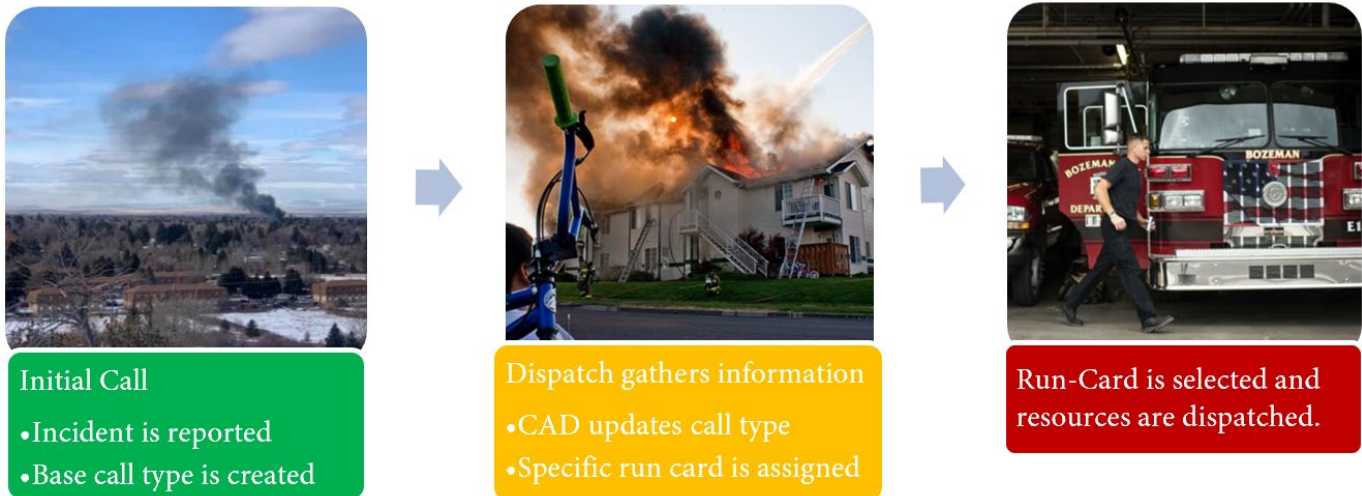


## Critical Task Analysis

### Run-Card

Bozeman Fire Department resources are dispatched to calls for service using a system of predetermined resource allocation run-cards. Gallatin County 911, using a computer aided dispatch (CAD) system, receives information from the caller, codes the call type, and assigns units based on the assigned run-card. Run cards are organized into four classifications of response type: EMS, fire, hazardous materials, and rescue. As the call is created by dispatch in the CAD system, a base run card is assigned. As further information becomes available, the call type will adjust, and the appropriate run card will automatically assign units for response. For instance, when a structure fire is created in the system, it will initially assign a base-level structure fire run-card. As more information is input to CAD, a more appropriate run-card will be assigned. As an example, if dispatch receives information that a structure fire is reported at a single-family residence, the structure fire – residential run card is selected. Once dispatch has enough information to appropriately assign resources, the run card will automatically select and dispatch units based on the predetermined resource allocation set through the run-card system, factoring in the closest available units.

### Upgraded Assignments



Once initial units are dispatched, they will receive further details through a radio dispatch update and on their unit's mobile data terminal (MDT). If any responding unit determines that further resources are needed based on the information available, they may request that dispatch change the call type to assign a different resource package, or they may request an upgraded alarm.

When a run card is assigned and initial units are dispatched, this is a first alarm assignment for that call type. Requests for additional resources are made by upgrading alarm assignments through dispatch. A second and third alarm assignment will dispatch two additional structure engines and an additional command unit from available resources from surrounding automatic and mutual aid departments. A fourth alarm assignment is considered a "max deployment" and requests any available resources from the area. Specialized resources may be ordered through dispatch as well, such as aerial apparatus, transport ambulances, brush units, and water tenders.

### Critical Tasking

To ensure that the run-card system reflects the most accurate deployment of resources, the BFD conducts a critical task analysis. Each call for service has a variety of essential duties to be performed based on the needs of the call. These functions are referred to as critical tasks. Critical tasks have been broken down for call types and severities to which the department responds. The number of critical tasks needed on an incident determines how many personnel and units will be required to mitigate the incident. Generally, the department coordinates response based on a minimum of three personnel assigned to each company and a single person in the battalion chief role.

Critical tasks may vary in complexity based on the needs of the incident. For a call of minor severity, one person may be able to conduct multiple critical tasks. For example, on a structure fire – smoke investigation, the tasks of command, safety, and scene size-up may be combined for an individual. However, those same tasks on a complex incident, such as a commercial structure fire, will need to be separated to multiple responders.

The total number of critical tasks needed on an incident are then broken down into the needed responding personnel. This number, known as the effective response force (ERF), then informs the correct unit assignments within the run-card system.

Critical task analysis is constantly evolving, and the department is working to adopt an ongoing review process for call typing, task analysis, and resource deployment models. As the department and community grow, and resources expand in the emergency response network, critical task analysis will allow the BFD to maximize the effectiveness of its available resources.

It is important to note that severity levels do not imply the level of risk these calls represent. Severity refers to the number of critical tasks needed to bring an incident under control. The more demanding the incident is in severity, the more critical tasks the incident will require. Critical tasks directly relate to the number of personnel needed to mitigate the incident. Staffing levels at the BFD require three personnel assigned to each frontline apparatus and one on-duty command officer at all times. In addition to department staffing, partner agencies are also required to staff their response apparatus with three-member crews.

**Impact**

When deploying resources to meet the critical tasking needs based on call level severity, the department must plan on having minimum staffing at all levels to reliably meet the needs of the incident. This occasionally results in over-deployment of personnel and apparatus when the department runs at full staffing levels. Below is a table that illustrates fluctuating staffing levels:

**Fri, January 13, 2023 — Schedule**

<p><b>Battalion Chief</b> [P] [A] [R]</p> <p><b>Station 1</b></p> <p>Staffing level: (1/1) 7:00am - 7:00am</p> <p><b>R James Short</b> BC</p>	<p><b>Engine 2</b> [P] [A] [R]</p> <p><b>Station 2</b></p> <p>Staffing level: (3/3) 7:00am - 7:00am</p> <p><b>R Dillon Smith</b> AC ENG <b>R Jim Dyk</b> ENG <b>R Forrest Vogel</b></p>	<p><b>Employees Off</b> [P] [A] [R]</p> <p><b>V Brian Carroll</b> (Vacation) 01/13 7:00am - 01/14 7:00am <b>K Thaddeus Josephson</b> (Kelly Time) 01/13 7:00am - 01/14 7:00am <b>V Mark Radcliffe</b> (Vacation) 01/13 7:00am - 01/14 7:00am</p>
<p><b>Engine 1</b> [P] [A] [R]</p> <p><b>Station 1</b></p> <p>Staffing level: (3/3) 7:00am - 7:00am</p> <p><b>R Britton Clark</b> CPT MEDIC <b>R Nate Bashkirew</b> AE <b>R Clayton Thomas</b></p>	<p><b>Truck 3</b> [P] [A] [R]</p> <p><b>Station 3</b></p> <p>Staffing level: (3/3) 7:00am - 7:00am</p> <p><b>R Josh Charles</b> CPT <b>R Brian Rudge</b> AE <b>R Matthew Legler</b></p>	

The above scheduling layout displays minimum shift staffing for the day. There are three personnel assigned to each responding apparatus and one in the role of command. This allows the department to deploy ten personnel to complete the required critical tasking. If an incident requires 11-13 personnel available for critical tasks on an incident, additional resources would be required to respond to that incident. For example, a high-angle rope rescue requires a total of 11 personnel:

Significant Severity	
High Angle Rope Rescue	
Command	1
Safety	
Scene Size-Up	
Operations leader	1
Safety	1
Belay	2
Rescue team	2
Anchor	2
Patient Care/Transport	2
<b>Total personnel</b>	<b>11</b>

Meeting the needs of this incident would require all BFD units and one unit to respond from a partner agency. The run-card system is built to ensure minimum resource staffing is always in place by deploying the needed units regardless of full-staffing status.

# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

For example, another staffing model for the same shift results in 13 available personnel:

## Thu, January 19, 2023 — Schedule

<b>Battalion Chief</b> [P] [A] [R] Station 1 Staffing level: (1/1) 7:00am - 7:00am [R] <b>James Short</b> BC	<b>Engine 2</b> [P] [A] [R] Station 2 Staffing level: (4/3) 7:00am - 7:00am [R] <b>Thaddeus Josephson</b> CPT MEDIC [R] <b>Jim Dyk</b> ENG [R] <b>Brian Rudge</b> [R] <b>Forrest Vogel</b>	<b>Employees Off</b> [P] [A] [R] [V] <b>Scott Mueller</b> (Vacation) 01/19 8:00am - 01/19 5:00pm [C] <b>Clayton Thomas</b> (Comp Time) 01/19 7:00am - 01/19 5:00pm
<b>Engine 1</b> [P] [A] [R] Station 1 Staffing level: (3/3) 7:00am - 7:00am [R] <b>Britton Clark</b> CPT MEDIC [R] <b>Dillon Smith</b> ENG [R] <b>Nate Bashkirew</b> [R] <b>Clayton Thomas *</b>	<b>Truck 3</b> [P] [A] [R] Station 3 Staffing level: (4/3) 7:00am - 7:00am [R] <b>Josh Charles</b> CPT [R] <b>Mark Radcliffe</b> ENG [R] <b>Brian Carroll</b> MEDIC [R] <b>Matthew Legler</b>	

This staffing example responding to the same call could complete the required tasks without the aid of additional agencies. However, because this staffing fluctuates and is not reliable, the system is built to ignore these instances. This requires the commanding officer for the shift to be aware and adaptive. The command officer is given the discretion to cancel attached resources if they determine that the staffing model available to them on any particular day can meet the tasking needs of the incident.

With this deployment system in place, critical tasks needed on scene directly relate to the impact that incident will have on the resources available to the department. This is reflected in the risk analysis process and scored in the impact portion of the risk matrix.

### Critical Tasking – Severity Levels

The BFD has determined that incidents are sorted into four distinct risk severity levels: minor, moderate, significant, and critical. These levels correspond to the number of critical tasks needed to effectively resolve the incident. The table below represents severity levels broken down into incident type categories. This table includes call type examples for each category level. These examples represent incidents that were used in the critical task analysis process. It is important to reiterate that the severity level does not reflect overall risk classification; it is only representative of the complexity of the call and its impact on the continuity of operations. Critical task tables are available for review in [Appendix A](#).

**Table 4: Fire Incident Severity Levels**

Minor (Up to three critical tasks required)	Moderate (4-7 critical tasks)
<ul style="list-style-type: none"> <li>• Fire Alarm</li> <li>• Structure Fire – Appliance</li> <li>• Structure Fire – Chimney</li> <li>• Structure Fire – Extinguished</li> <li>• Structure Fire – Smoke</li> <li>• Vehicle Fire</li> <li>• Outside Fire</li> <li>• Controlled Burn</li> </ul>	<ul style="list-style-type: none"> <li>• Explosion</li> <li>• Low Acuity Fire with Injuries</li> <li>• Wildland Grass/Brush Fire</li> </ul>
Significant (8-12 critical tasks)	Critical (13-20 critical tasks)
<ul style="list-style-type: none"> <li>• MVA Fire Hazmat</li> <li>• Explosion with Injury</li> <li>• MVA Fire Entrapment</li> <li>• Structure Fire - Residential</li> </ul>	<ul style="list-style-type: none"> <li>• Structure Fire – Commercial</li> <li>• Structure Fire – 4+Stories (Residential)</li> </ul>

**Table 5: EMS Incident Severity Levels**

Minor (Up to three critical tasks)	Moderate (4-7 critical tasks)
<ul style="list-style-type: none"> <li>• EMS low acuity</li> </ul>	<ul style="list-style-type: none"> <li>• Cardiac Arrest</li> </ul>
Significant (8-12 critical tasks)	Critical (13-20 critical tasks)
<ul style="list-style-type: none"> <li>• Small MCI 2-4 Patients</li> </ul>	<ul style="list-style-type: none"> <li>• Large MCI 5+ Patients</li> </ul>

**Table 6: Technical Rescue Incident Severity Levels**

Minor (Up to three critical tasks)	Moderate (4-7 critical tasks)
<ul style="list-style-type: none"> <li>• Elevator Malfunction</li> <li>• Trapped Animal – Service Call</li> <li>• SAR – Urban Missing Person</li> </ul>	<ul style="list-style-type: none"> <li>• MVA with Injury</li> <li>• MVA – High Speed Roadway</li> <li>• Ice Rescue</li> </ul>
Significant (8-12 critical tasks)	Critical (13-20 critical tasks)
<ul style="list-style-type: none"> <li>• High Angle Rope Rescue</li> <li>• Confined Space Rescue</li> <li>• Trench Rescue</li> </ul>	<ul style="list-style-type: none"> <li>• Building Collapse</li> </ul>

**Table 7: Hazardous Materials Incident Severity Levels**

Minor (Up to three critical tasks)	Moderate (4-7 critical tasks)
<ul style="list-style-type: none"> <li>• Gas Odor</li> <li>• Carbon Monoxide Alarm</li> <li>• Spill/Release</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon Monoxide Alarm with Injury</li> <li>• MVA HazMat Release</li> </ul>
Significant (8-12 critical tasks)	Critical (13-20 critical tasks)
<ul style="list-style-type: none"> <li>• MVA HazMat Entrapment</li> </ul>	<ul style="list-style-type: none"> <li>• HazMat Large Spill/Release</li> </ul>

## Extraordinary Circumstances (maximum deployment required)

In addition to the four severity levels shown, an additional descriptor is necessary to reflect catastrophic incidents. These types of incidents may be a single incident type, such as a large-scale wildland incident, or a combination of response types. These incidents require a tremendous amount of resources to resolve and may require several operational periods with transitioning resources.

The Bozeman Fire Department has experienced few of these incidents, and data from 2020-2022 does not reflect responses to any extraordinary circumstances. However, records from previous years reflect that the department does experience occasional extraordinary incidents. In early 2019, a four-story apartment building under construction caught fire near Bozeman’s downtown district. The ‘SOBO’ building fire severely impacted the continuity of operations and required multiple county agencies to respond in aid.



**Photo credit: Diane Fenlason**

Incidents requiring this level of response are rare, but they must be planned for. An incident of this nature, regardless of call type, requires more than 21 responders to handle critical on-scene tasks. Below is an example of critical tasks for an incident of extraordinary severity:

<b>Extraordinary</b>	
<b>Structure Fire - 4+ stories (residential)</b>	
Command	1
Safety Officer	1
Division Supervisor	1
Staging Officer	1
Fire Attack	3
Back-up team	3
On Deck/RIT	3
Search/Rescue	4
Exposure protection	2
Ventilation	2
Pump operator	1
Water supply/support	1
Salvage/Overhaul	4
Rehab (AMR)	2
<b>Total personnel</b>	<b>29</b>

## Risk Scoring

### Fire Suppression

Minimal Risk	
<b>RISK</b>	
Probability of occurrence	4
Consequence to community	2
Impact on fire department	4
<b>SCORE</b>	<b>13.85641</b>

#### Critical Task Example

Wildland Grass/Brush	
Command	1
Safety	
Scene Size-Up	
Crew Leader	2
Driver/Operator	2
Fire Control	2
<b>Total personnel</b>	<b>7</b>



Low Risk	
<b>RISK</b>	
Probability of occurrence	10
Consequence to community	2
Impact on fire department	2
<b>SCORE</b>	<b>20.19901</b>

#### Critical Task Example

Fire - Alarm	
Command/Safety	1
Driver/Operator	1
Fire Control/Investigation	1
<b>Total personnel</b>	<b>3</b>





# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Medium Risk	
<b>RISK</b>	
Probability of occurrence	4
Consequence to community	4
Impact on fire department	8
<b>SCORE</b>	<b>33.94113</b>

Critical Task Example

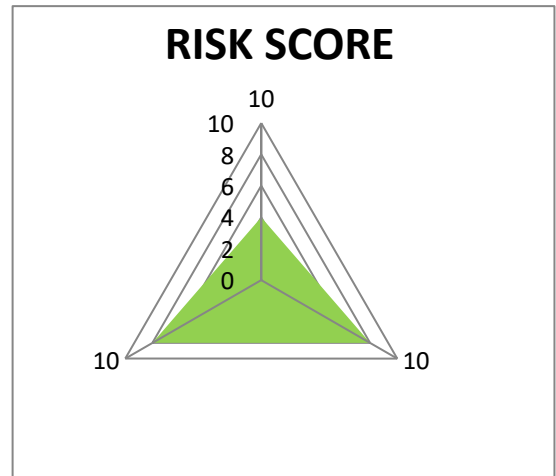
Structure Fire - Residential	
Command	1
Safety Officer	1
Fire attack	2
Driver/Operator	1
On Deck/RIT	2
Search/Rescue	2
Ventilation	2
Water supply/support	1
Rehab (AMR)	2
<b>Total personnel</b>	<b>14</b>



High Risk	
<b>RISK</b>	
Probability of occurrence	4
Consequence to community	8
Impact on Fire Department	8
<b>SCORE</b>	<b>55.42563</b>

Critical Task Example

Structure Fire - Commercial	
Command	1
Safety Officer	1
Fire attack	4
Staging officer	1
Driver/Operator	1
On Deck/RIT	4
Search/Rescue	4
Ventilation	2
Rehab (AMR)	2
<b>Total personnel</b>	<b>20</b>



**Emergency Medical Services**

Low Risk	
<b>RISK</b>	
Probability of occurrence	<b>10</b>
Consequence to community	<b>2</b>
Impact on fire department	<b>2</b>
<b>SCORE</b>	<b>20.19901</b>

Critical Task Example

EMS low acuity	
Patient Care	2
Safety/Command	1
Transport	2
<b>Total personnel</b>	<b>5</b>



Medium Risk	
<b>RISK</b>	
Probability of occurrence	<b>4</b>
Consequence to community	<b>4</b>
Impact on fire department	<b>8</b>
<b>SCORE</b>	<b>33.94113</b>

Critical Task Example

CPR	
Command	1
Safety	
Scene Size-Up	1
Team Lead	
Patient Assessment	1
Ventilation/Airway	
Compressions	1
Monitor	
Medications/IV/IO	1
Driver/Scene logistics	
<b>Total personnel</b>	<b>6</b>



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

High Risk	
<b>RISK</b>	
Probability of occurrence	2
Consequence to community	10
Impact on fire department	8
<b>SCORE</b>	<b>59.39697</b>

Critical Task Example

Large MCI 5+ Patients	
Command	1
Safety	1
Scene Size-Up	1
Triage Officer	1
Transport Officer	1
Treatment Officer	1
Staging	1
Transport Personnel	6
Treatment Personnel	2
Triage Personnel	4
<b>Total personnel</b>	<b>19</b>



## Hazardous Materials Response

Low Risk	
<b>RISK</b>	
Probability of occurrence	4
Consequence to community	2
Impact on fire department	4
<b>SCORE</b>	<b>13.85641</b>

Critical Task Example

MVA Hazmat Release	
Command	1
Safety	1
Scene Size-Up	1
Crew Leader	1
Driver/Operator	1
Detection/Monitoring	1
Dike/Dam/Divert	2
Leak/Spill Control	2
<b>Total personnel</b>	<b>8</b>



Medium Risk	
<b>RISK</b>	
Probability of occurrence	10
Consequence to community	2
Impact on fire department	2
<b>SCORE</b>	<b>20.19901</b>

Critical Task Example

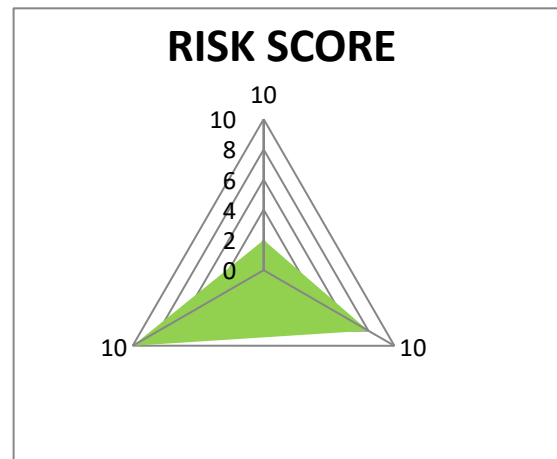
Small Spill/Leak (Gas Odor)	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Investigation	1
<b>Total personnel</b>	<b>3</b>



High Risk	
<b>RISK</b>	
Probability of occurrence	2
Consequence to community	8
Impact on fire department	10
<b>SCORE</b>	<b>59.39697</b>

Critical Task Example

Hazmat Large Spill/Release	
Command	1
Safety Officer	1
Entry Team Leader	1
Medical	1
Research	1
Entry Team	3
Back-up Team	3
Decon	4
Ventilation/Monitoring	2
Pump operator	1
Rehab (AMR)	2
<b>Total personnel</b>	<b>20</b>



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

## Technical Rescue

Minimal Risk	
<b>RISK</b>	
Probability of occurrence	<b>10</b>
Consequence to community	<b>2</b>
Impact on fire department	<b>2</b>
<b>SCORE</b>	<b>20.19901</b>

Critical Task Example

Elevator Malfunction	
Command/Safety	1
Driver/Operator	1
Operations/Investigation	1
<b>Total personnel</b>	<b>3</b>



Low Risk	
<b>RISK</b>	
Probability of occurrence	<b>2</b>
Consequence to community	<b>4</b>
Impact on fire department	<b>8</b>
<b>SCORE</b>	<b>25.923</b>

Critical Task Example

Trench Rescue	
Command	1
Safety Officer	1
Operations leader	1
Entry Team	2
Shoring/stabilization	4
Back-up team	2
Ventilation	2
Rehab (AMR)	2
<b>Total personnel</b>	<b>15</b>



Medium Risk	
<b>RISK</b>	
Probability of occurrence	8
Consequence to community	2
Impact on Fire Department	6
<b>SCORE</b>	<b>36.76955</b>

Critical Task Example

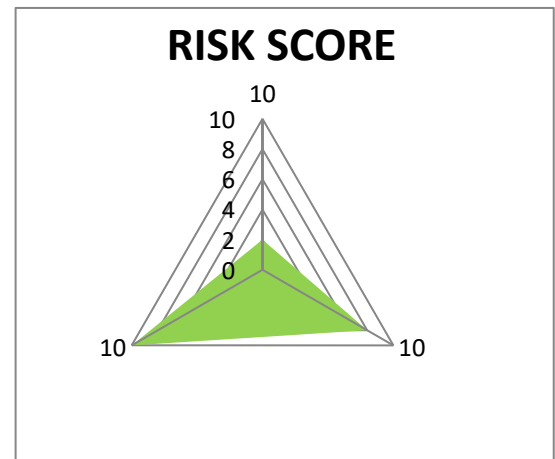
Motor Vehicle Accident with Injury	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Extrication	2
Vehicle Stabilization	2
Patient Care/Transport (AMR)	2
<b>Total personnel</b>	<b>9</b>



High Risk	
<b>RISK</b>	
Probability of occurrence	2
Consequence to community	8
Impact on Fire Department	10
<b>SCORE</b>	<b>59.39697</b>

Critical Task Example

Building Collapse	
Command	1
Safety	1
Operations leader	1
Shoring/Stabilization	4
Search/Rescue	4
On-Deck/Back-up	2
Extrication	2
Patient Care/Transport	4
<b>Total personnel</b>	<b>19</b>



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

## Extraordinary Incident

Extraordinary	
<b>RISK</b>	
Probability of occurrence	<b>2</b>
Consequence to community	<b>10</b>
Impact on Fire Department	<b>10</b>
<b>SCORE</b>	<b>73.48469</b>

### Critical Task Example

Structure Fire - 4+ stories (Residential)	
Command	1
Safety Officer	1
Division Supervisor	1
Staging Officer	1
Fire Attack	3
Back-up team	3
On Deck/RIT	3
Search/Rescue	4
Exposure protection	2
Ventilation	2
Pump operator	1
Water supply/support	1
Salvage/Overhaul	4
Rehab (AMR)	2
<b>Total personnel</b>	<b>29</b>



## Risk Classification and Categorization

**Table 8: Risk Classification and Categorization**

Incident Classification	Risk Category	Incident Examples	Description	Numeric Range
Fire	Minimal	<ul style="list-style-type: none"> <li>Explosion</li> <li>Low Acuity Fire with Injury</li> <li>Wildland Grass/Brush Fire</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly event (4-12 incidents/year)</li> <li>Minimal consequence to the community</li> <li>Moderate impact on the response system (4-7 critical tasks)</li> </ul>	0-14
Fire	Low	<ul style="list-style-type: none"> <li>Fire Alarm Activation</li> <li>Chimney Fire</li> <li>Smoke Investigation</li> <li>Vehicle Fire</li> <li>Outside Fire (Dumpster)</li> </ul>	<ul style="list-style-type: none"> <li>Minimal impact (<math>\leq 3</math> Critical tasks)</li> <li>Daily event (183 or more incidents/year)</li> <li>Minimal consequence (No injuries, little property lost)</li> </ul>	14-21
Fire	Medium	<ul style="list-style-type: none"> <li>MVA w/ Fire and entrapment</li> <li>Explosion with injury</li> <li>Single-Family Residential Structure Fire</li> </ul>	<ul style="list-style-type: none"> <li>Significant to Critical impact (8-20 Critical tasks)</li> <li>Quarterly event (4-12 incidents/year)</li> <li>Consequence: 2-4 people involved/single family residence</li> </ul>	21-34
Fire	High	<ul style="list-style-type: none"> <li>Commercial Structure Fire</li> <li>Multi-Residential Structure Fire</li> </ul>	<ul style="list-style-type: none"> <li>Critical impact (13-20 Critical tasks)</li> <li>Quarterly event (4-12 incidents/year)</li> <li>Consequence: Multi-residential or commercial structure</li> </ul>	34-56
EMS	Low	<ul style="list-style-type: none"> <li>Low acuity EMS</li> </ul>	<ul style="list-style-type: none"> <li>Daily – weekly incidents (more than 27 incidents/year)</li> <li>Minimal consequence (one person involved)</li> <li>Minimal impact (<math>\leq 3</math> Critical tasks)</li> </ul>	0-21
EMS	Medium	<ul style="list-style-type: none"> <li>CPR in progress</li> <li>Incident with 2-4 patients</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly events (4-12 incidents/year)</li> <li>2-4 patients</li> <li>Moderate to Significant Impact (6-12 Critical tasks)</li> </ul>	21-34
EMS	High	Multiple Casualty Incident with five or more patients	<ul style="list-style-type: none"> <li>0-3 annual events</li> <li>5 or more patients</li> <li>Critical impact (13-20 critical tasks)</li> </ul>	35-60
Hazardous Materials	Low	<ul style="list-style-type: none"> <li>Hazmat leak w/ injury</li> <li>MVA with hazmat release</li> <li>MVA with Hazmat and entrapment</li> </ul>	<ul style="list-style-type: none"> <li>Weekly events (27-182 incidents/year)</li> <li>Minimal consequence</li> <li>Moderate impact (4-7 critical tasks)</li> </ul>	0-17
Hazardous Materials	Medium	<ul style="list-style-type: none"> <li>Gas odor investigation</li> <li>Small spill/leak</li> </ul>	<ul style="list-style-type: none"> <li>Daily events with minimal consequence and impact</li> </ul>	17-21
Hazardous Materials	High	<ul style="list-style-type: none"> <li>MVA w/ Hazmat and entrapment</li> <li>Large Hazmat spill/release</li> </ul>	<ul style="list-style-type: none"> <li>Annual events (0-3/year)</li> <li>Multi-residential or commercial structures</li> <li>Maximum severity (21 or more critical tasks)</li> </ul>	21-60
Technical Rescue	Minimal	<ul style="list-style-type: none"> <li>Elevator Malfunction</li> <li>Trapped animal service call</li> <li>Urban Search and Rescue</li> </ul>	<ul style="list-style-type: none"> <li>Daily events</li> <li>Minimal consequence</li> <li>Minimal impact</li> </ul>	0-21

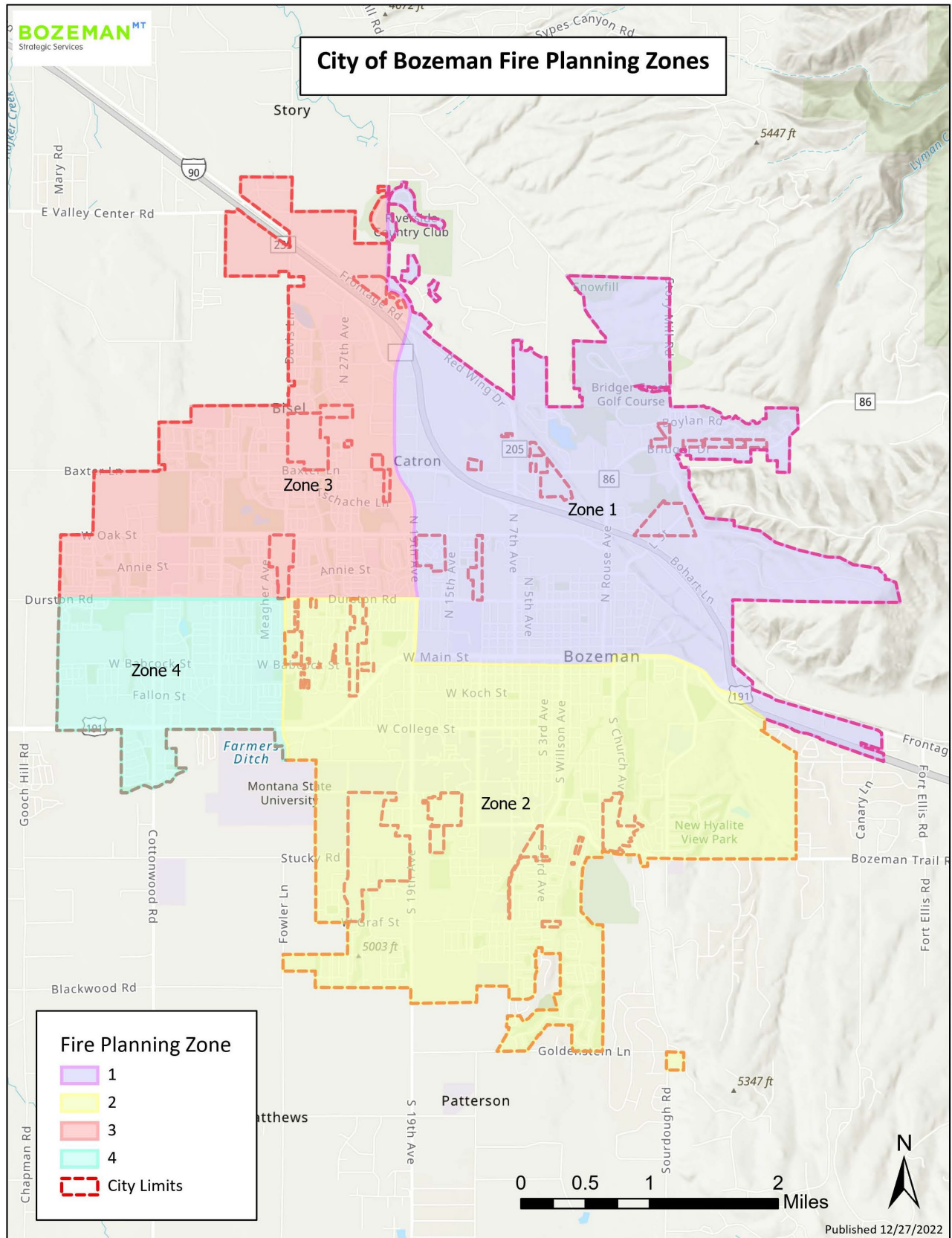


## COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Incident Classification	Risk Category	Incident Examples	Description	Numeric Range
<b>Technical Rescue</b>	Low	<ul style="list-style-type: none"> <li>• High angle rope rescue</li> <li>• Confined Space rescue</li> <li>• Trench rescue</li> </ul>	<ul style="list-style-type: none"> <li>• Annual event (0-3)</li> <li>• 2-4 people involved or single-family residence</li> <li>• Critical severity (11-15 tasks)</li> </ul>	21-26
<b>Technical Rescue</b>	Medium	<ul style="list-style-type: none"> <li>• MVA with injury</li> <li>• MVA on a high speed roadway</li> <li>• Ice Rescue</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly events (27-182/year)</li> <li>• Minimal consequence (one person or vehicle)</li> <li>• Moderate severity (7-9 critical tasks)</li> </ul>	26-37
<b>Technical Rescue</b>	High	<ul style="list-style-type: none"> <li>• Building Collapse</li> </ul>	<ul style="list-style-type: none"> <li>• Annual events (0-3/year)</li> <li>• Consequence: Multi-family or commercial</li> <li>• Maximum severity (19 or more critical tasks)</li> </ul>	37-48
<b>Extraordinary Incidents - All classifications</b>	Extraordinary	<ul style="list-style-type: none"> <li>• Mid-rise or high-rise structure fire</li> <li>• Target Hazard Fire                             <ul style="list-style-type: none"> <li>○ High-consequence structures with at-risk populations</li> <li>○ Montana State University</li> <li>○ Critical Infrastructure</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Low probability (0-3 incidents/year)</li> <li>• High consequence (multiple casualties/critical infrastructure/target hazard)</li> <li>• Maximum severity (21 or more critical tasks/Max deployment)</li> </ul>	56 or higher

**Geographical Planning Areas/Zones**

**Map 20: Fire Planning Zones**



The city is divided into four geographical planning zones to best analyze risk and incident response data. Each zone was constructed using a four-minute drive time from each station, with some major transportation components used as dividing lines in areas where the four-minute drive times boundaries between districts overlapped. With the department only having three stations, the development of a fourth planning zone to represent the areas outside of the four-minute drive time was developed to help further analyze risk in that area.

**Planning Zone 1**, in the northeast area of Bozeman, is the primary response zone for Station 1 and is comprised of both single and multi-family residential occupancies, commercial, industrial, and educational facilities. Planning Zone 1 contains what would be considered the original core of Bozeman, has the largest section of rail transportation passing through it, and it has a large portion of Interstate 90 passing through it. This zone also contains the warming center for unhoused residents of Bozeman, and the majority of key local government facilities, including the county emergency operations center. There were 1,870 incidents in Zone 1 in 2022.

**Planning Zone 2**, in the southeast area of Bozeman, is the primary response zone for Station 2 and is comprised of both single and multi-family residential occupancies, commercial, and educational facilities. Planning Zone 2 houses the campus of Montana State University and is currently the fastest developing zone in terms of new planned developments. This zone includes Bozeman Deaconess Hospital and Gallatin County Law and Justice Center, which houses the county correctional facility. There were 1,462 incidents in Zone 2 in 2022.

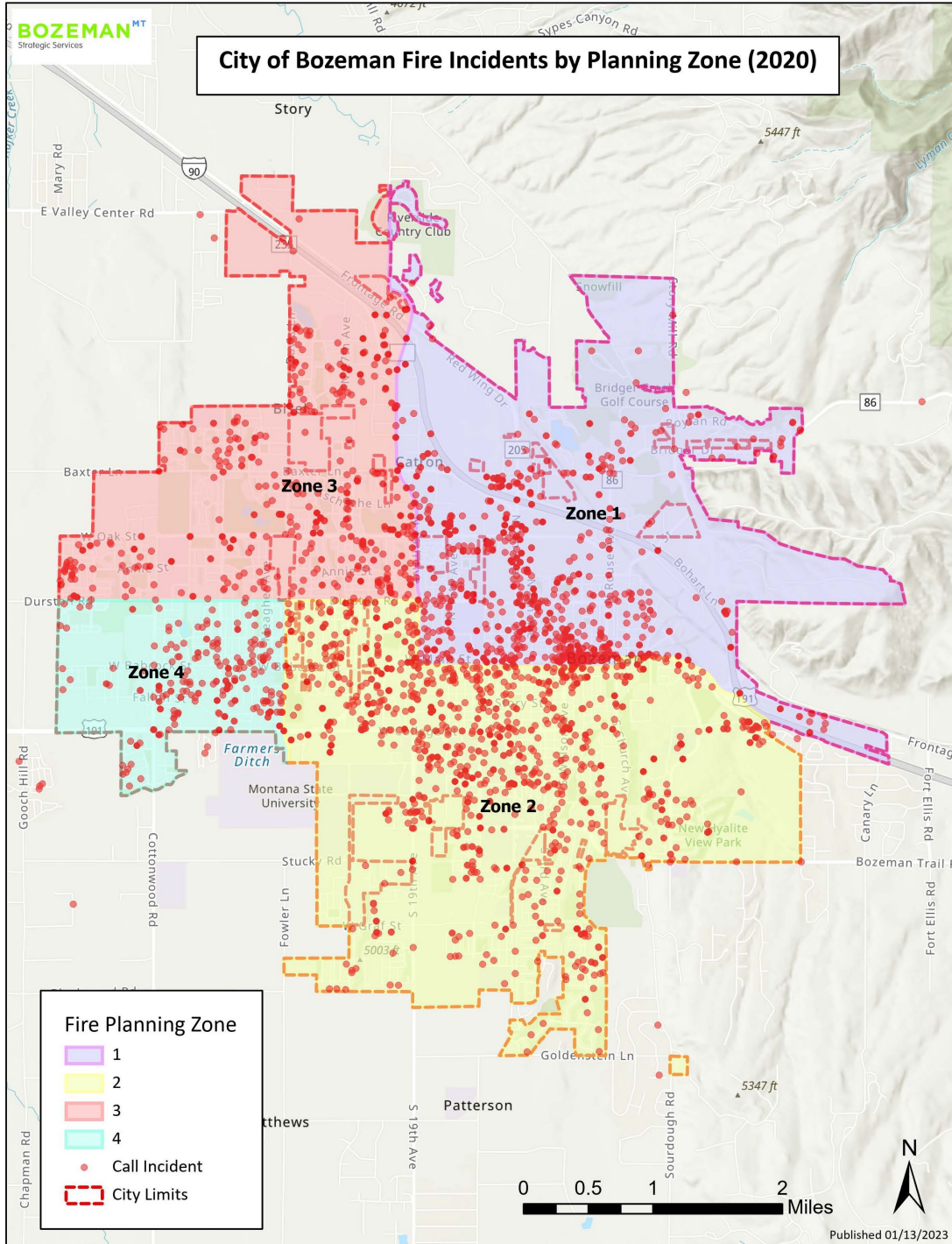
**Planning Zone 3**, in the northwest area of Bozeman, is the primary response zone for Station 3 and is comprised of both single and multi-family residential occupancies, commercial, institutional, and educational facilities. The overwhelming majority of Planning Zone 3 is development that has occurred in the last 20 years as the city has grown. This zone has portions of Interstate 90 passing through it, has a section of rail transportation, and includes a majority of the city's assisted living and nursing facilities. There were 991 incidents in Zone 3 in 2022.

**Planning Zone 4**, in the southwest area of Bozeman, does not have a primary fire station for response as it is outside of the four-minute drive time window. Planning Zone 4 is comprised of both single-family and multi-family occupancies and commercial facilities. Growth in Planning Zone 4 has been limited in the past due to a lack of infrastructure support, mainly water and sewer, something that has been recently addressed, setting this zone up for new development and growth moving forward. There were 232 incidents in Zone 4 in 2022.

**Table 9: Call Disbursement by Planning Zone (2020)**  
**2020 Incident Mapping**

2020 Total Calls	4,621
Zone 1	1,768
Zone 2	1,565
Zone 3	913
Zone 4	287
Outside Fire Planning Zone	88

**Map 21: Fire Incidents by Planning Zone (2020)**

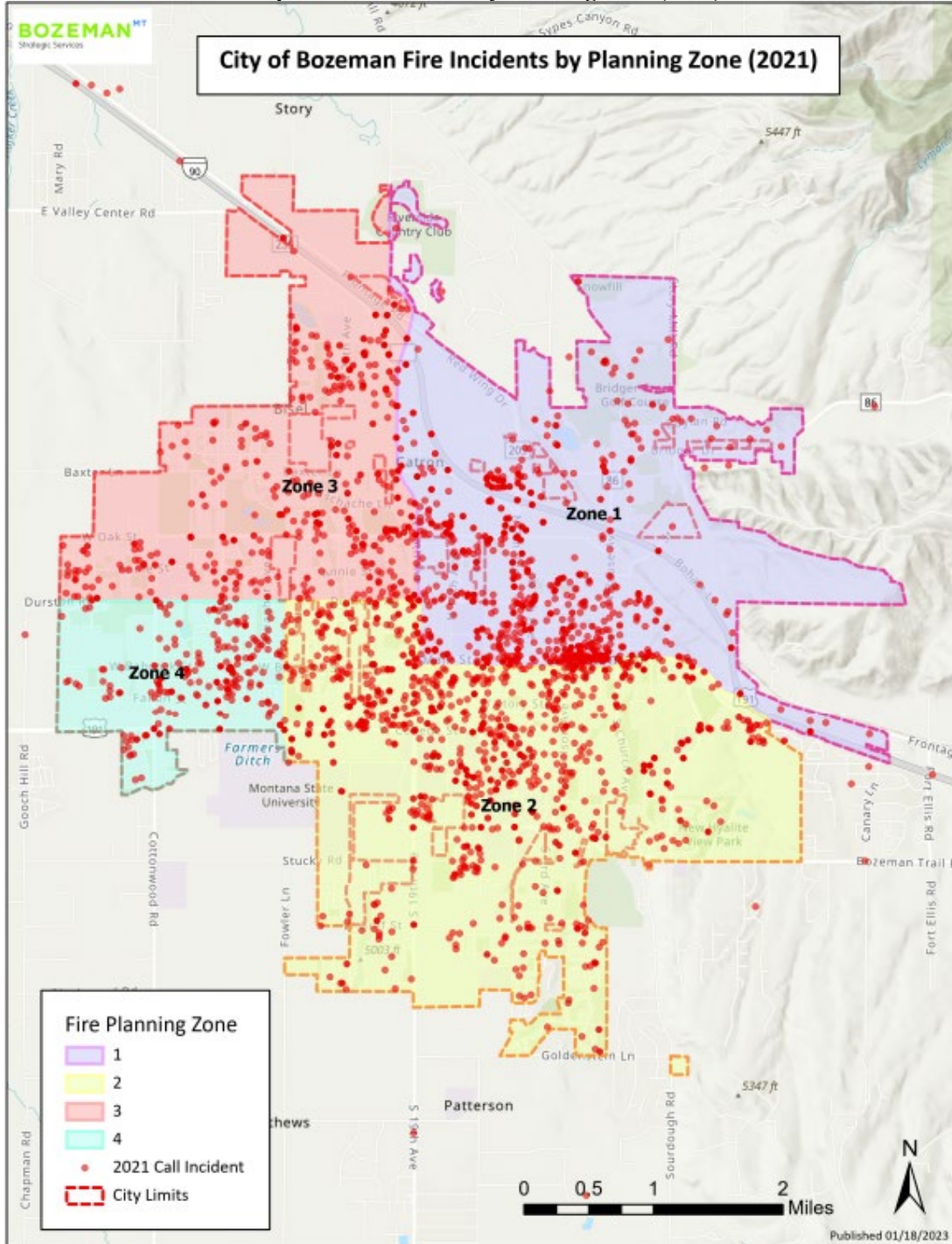


# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

**Table 10: Call Disbursement by Planning Zone (2021)**

2021 Incident Mapping	
2021 Total Calls	4,347
Zone 1	1,633
Zone 2	1,460
Zone 3	880
Zone 4	267
Outside Fire Planning Zone	107

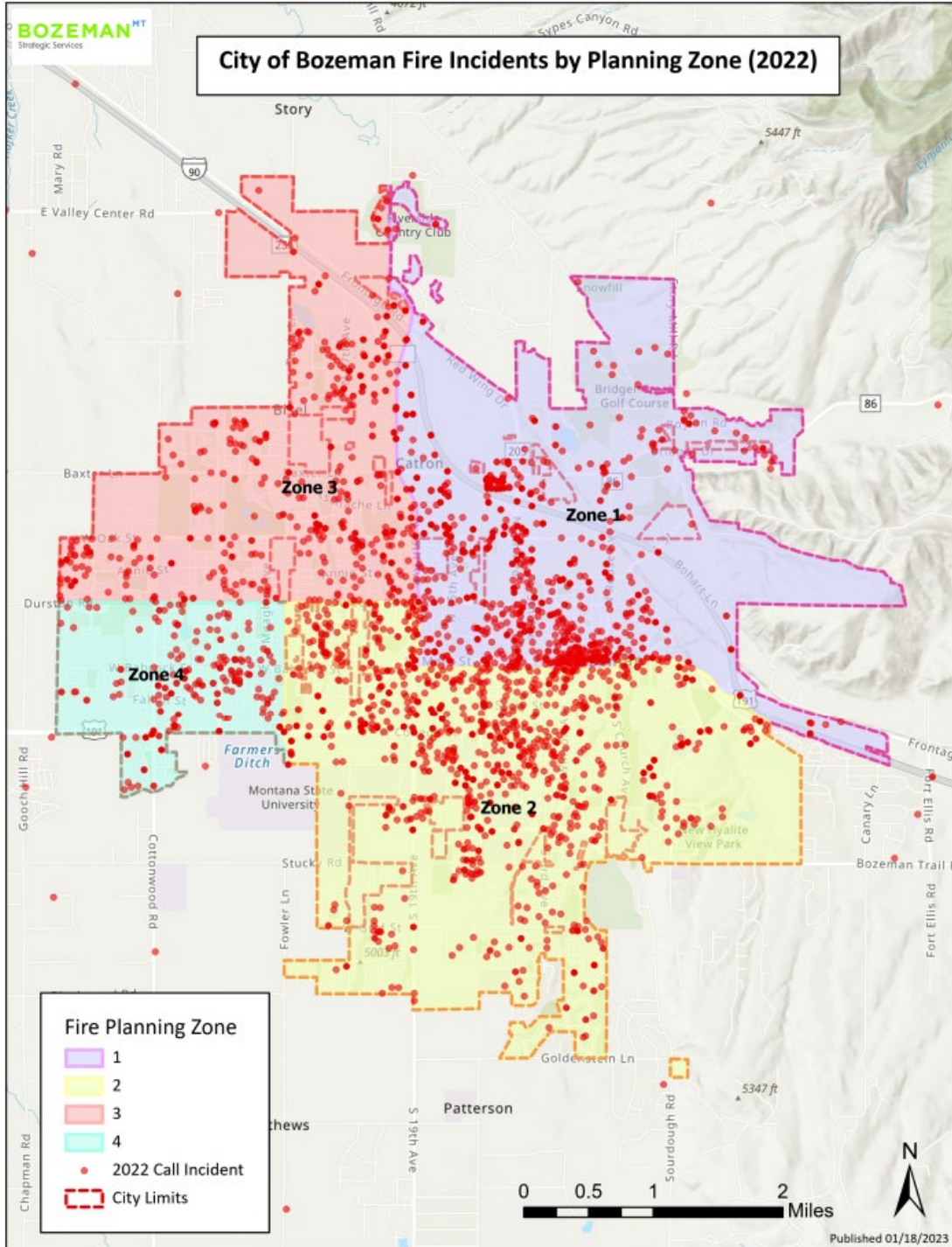
**Map 22: Fire Incidents by Planning Zone (2021)**



**Table 11: Call Disbursement by Planning Zone (2022)**  
**2022 Incident Mapping**

2022 Total Calls	4,668
Zone 1	1,870
Zone 2	1,462
Zone 3	991
Zone 4	232
Outside Fire Planning Zone	113

**Map 23: Fire Incidents by Planning Zone (2022)**



## H. Historical Perspective and Summary of System Performance

The Bozeman Fire Department (BFD) intends to deploy resources efficiently to quickly provide mitigation efforts on emergency scenes. This effort requires understanding how fire stations are strategically positioned, how calls for service are dispatched to response resources, and how the evolving landscape of area emergency service demand creates unique obstacles to the department.

The fire and emergency medical service has communicated clearly and consistently that response time plays a critical factor in positive outcomes. Response times are defined as the total time from when a 911 call is received by the dispatch center to when the first fire apparatus arrives on scene. This can be further broken down into multiple components:

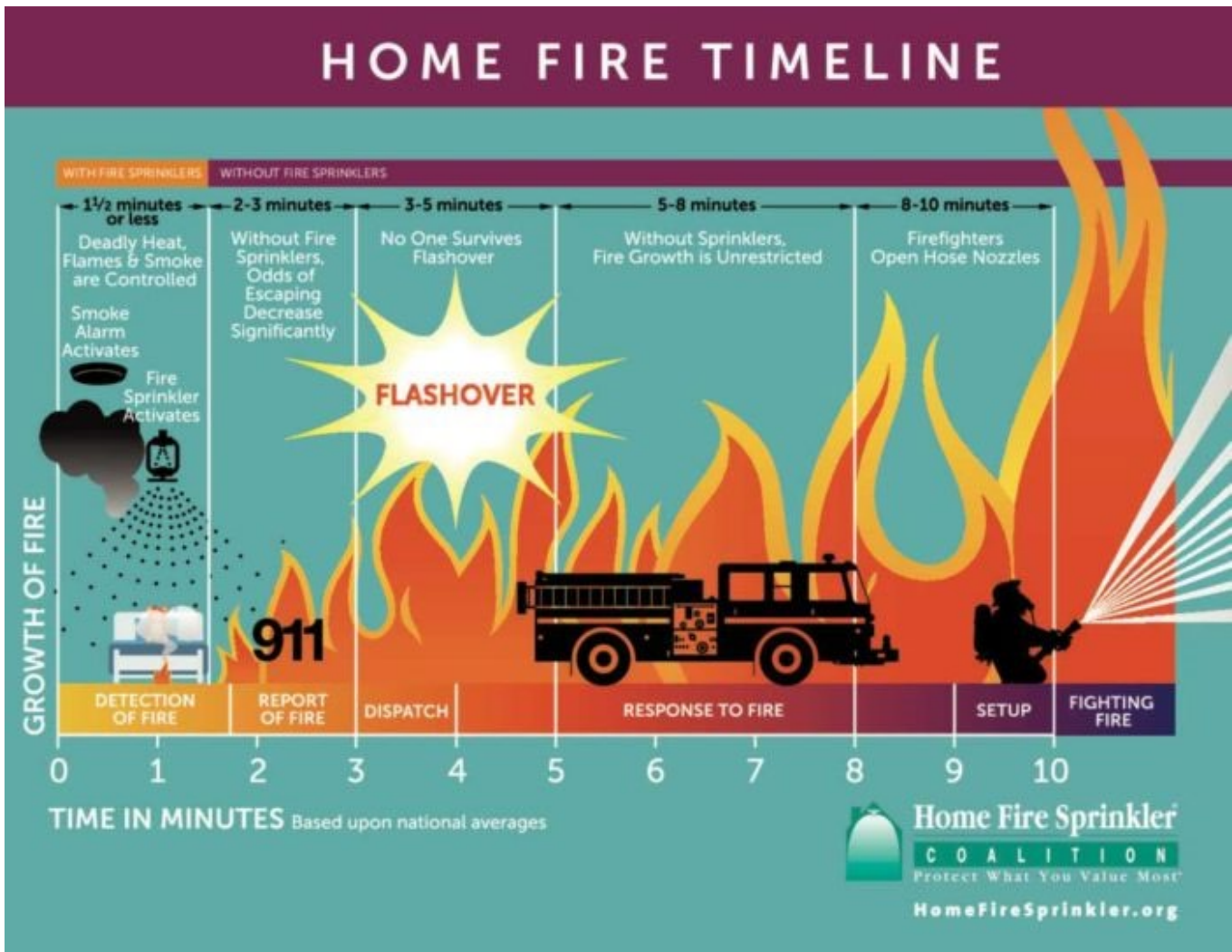
**Call Processing and Dispatch Time (Alarm Handling)** - Begins the moment a 911 call is received by the dispatch center and ends the moment that the appropriate apparatus are assigned and notified of the needed response. Call processing time benchmarks established by NFPA 1221 recommend that 90% of emergency call processing should be completed within 60 seconds and 99% should be completed within 90 seconds.

**Turnout Time** - Begins when the units are notified of the emergency dispatch and ends when the unit confirms response to the emergency. Once units are notified, personnel move to apparatus, don appropriate personal protective equipment (PPE), and initiate travel to the scene. NFPA 1710 recommends that turnout time be under 80 seconds for fire calls and under 60 seconds for EMS calls for 90% of emergency responses.

**Travel Time** - The time traveling from the fire station to the emergency scene. NFPA 1710 recommends the first arriving unit should arrive on scene within 240 seconds from initial response, and that the effective response force should all arrive within 480 seconds for residential fires.

The NFPA standards of 1221 and 1710 are based on the need for emergency responders to arrive on scene and rapidly intervene.

NFPA 1710 and 1221 were developed as recommendations through rigorous study and consensus-based decision from industry leaders. The modern fire environment contributes to the rapid escalation of fire conditions. As illustrated in the following graphic from the Home Fire Sprinkler Coalition, response times are critical to positive outcomes.



**Figure 19: Home Fire Timeline**

In addition, rapid response is also critical in determining outcomes on emergency medical calls. The sooner trained and equipped medical providers arrive on scene, the quicker that aid can be rendered to patients. Total response times also play a critical role in the outcomes of high-acuity medical calls.

Several factors influence a department’s ability to meet NFPA recommendations. For the Bozeman Fire Department to understand and establish benchmarks in consideration of NFPA intent, a historical review of factors must be conducted. This Community Risk Assessment/Standards of Cover document considers three years of historical response data and fixed factors unique to the Bozeman Fire Department.

Several items influence the total response time for the BFD. In September 2022, the BFD began operating out of a newly built headquarters station that replaced the previous Station 1. Moving a fire station location creates a unique problem in data analysis that may impact response time benchmarks. This factor may sway the last quarter dataset in 2022 as the new station is roughly one mile north of the previous station. Furthermore, the data will also include responses from Station 2 in its current location. The process to relocate Station 2 is underway, and all future benchmarks will be set with new station locations taken into consideration.



The data studied reflects how the Bozeman Fire Department performs in three categories:

- **Distribution** – A study of first unit arrival performance. This data set details how station locations impact response capabilities.
- **Concentration** – This category will examine the effective response force (ERF) response time. The data set details how calls are spread throughout the coverage area and how their distribution can impact the assembled ERF time.
- **Reliability** – This reflects the availability of units within the zone they are assigned. The data examines how concurrent calls can impact response times within the outlined zones.

Furthermore, all data used must be qualified and reliable. The final section of this module will detail the department’s process used to qualify and evaluate the appropriate data. This will include the process used to refine the data and what parameters were put into place for statistical outliers.

## Distribution Factors

The BFD has broken down data across four planning/response zones dividing the coverage area geographically within the city. Zones 1, 2, and 3 have a corresponding fire station with a primary response apparatus. Zone 4 does not have a designated station or response unit. Thus, it will represent an area within the coverage area that has a profound gap in emergency response services. Units are dispatched using an automatic vehicle location system (AVL) that ties in with the dispatch software to automatically assign units based on location and availability. Using AVL minimizes response times for available units, ensuring the closest unit will be assigned to the emergency call. This system creates some margin of error within boundary lines. There are instances when calls for service are within a station’s corresponding zone, but the closest unit may be from a different fire station. As the department refines the data through this study, response zones may be adjusted to increase accuracy within the data.

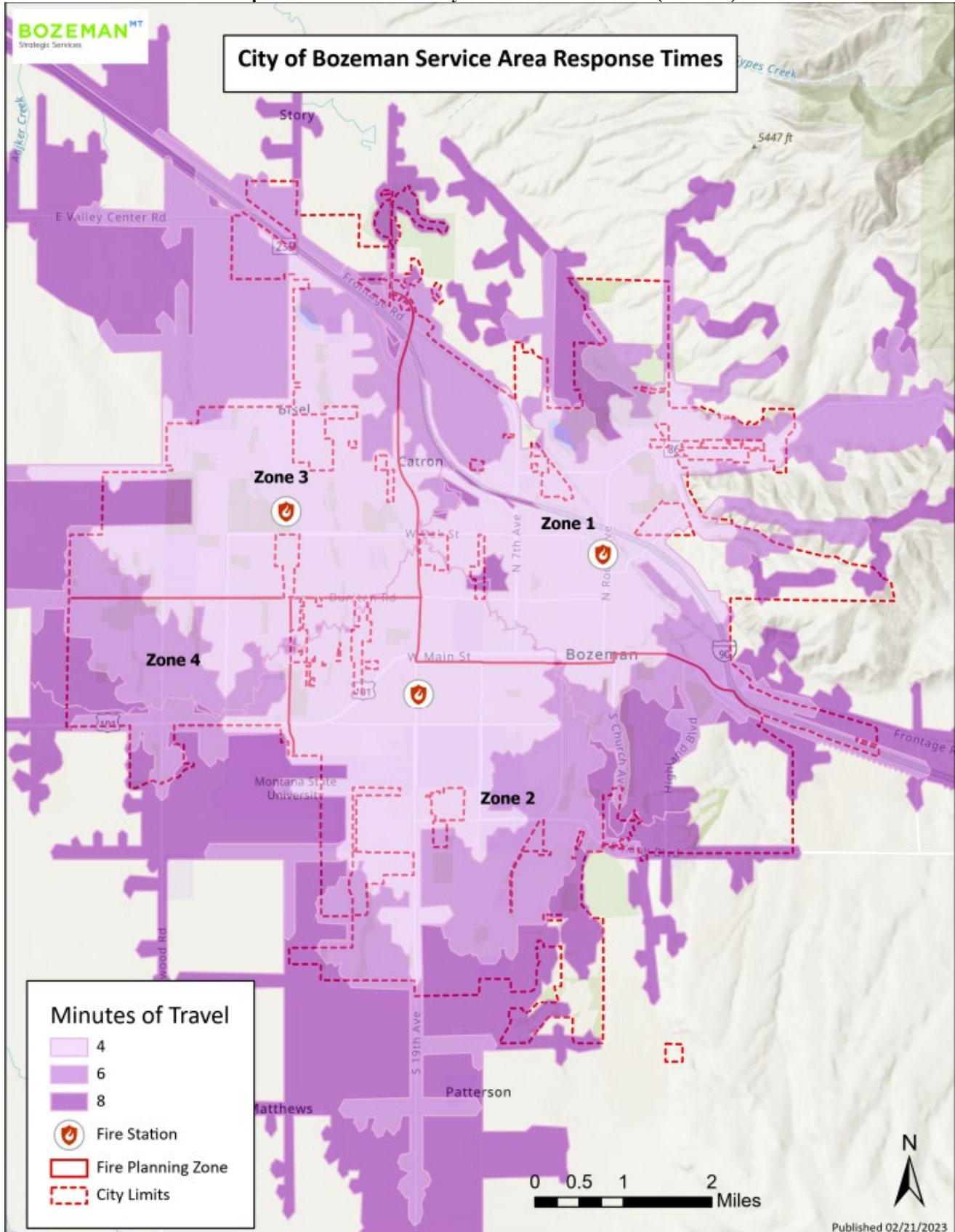
**Table 12: Square Miles, Road Miles, and Population of Each Response Zone**

Response Zone	Area in square miles	Road miles within zone	Estimated population
Zone 1	7.04 square miles	111.05 miles	10,559
Zone 2	8.51 square miles	141.05 miles	30,834
Zone 3	5.02 square miles	91.42 miles	15,067
Zone 4	1.99 square miles	40.57 miles	7,128

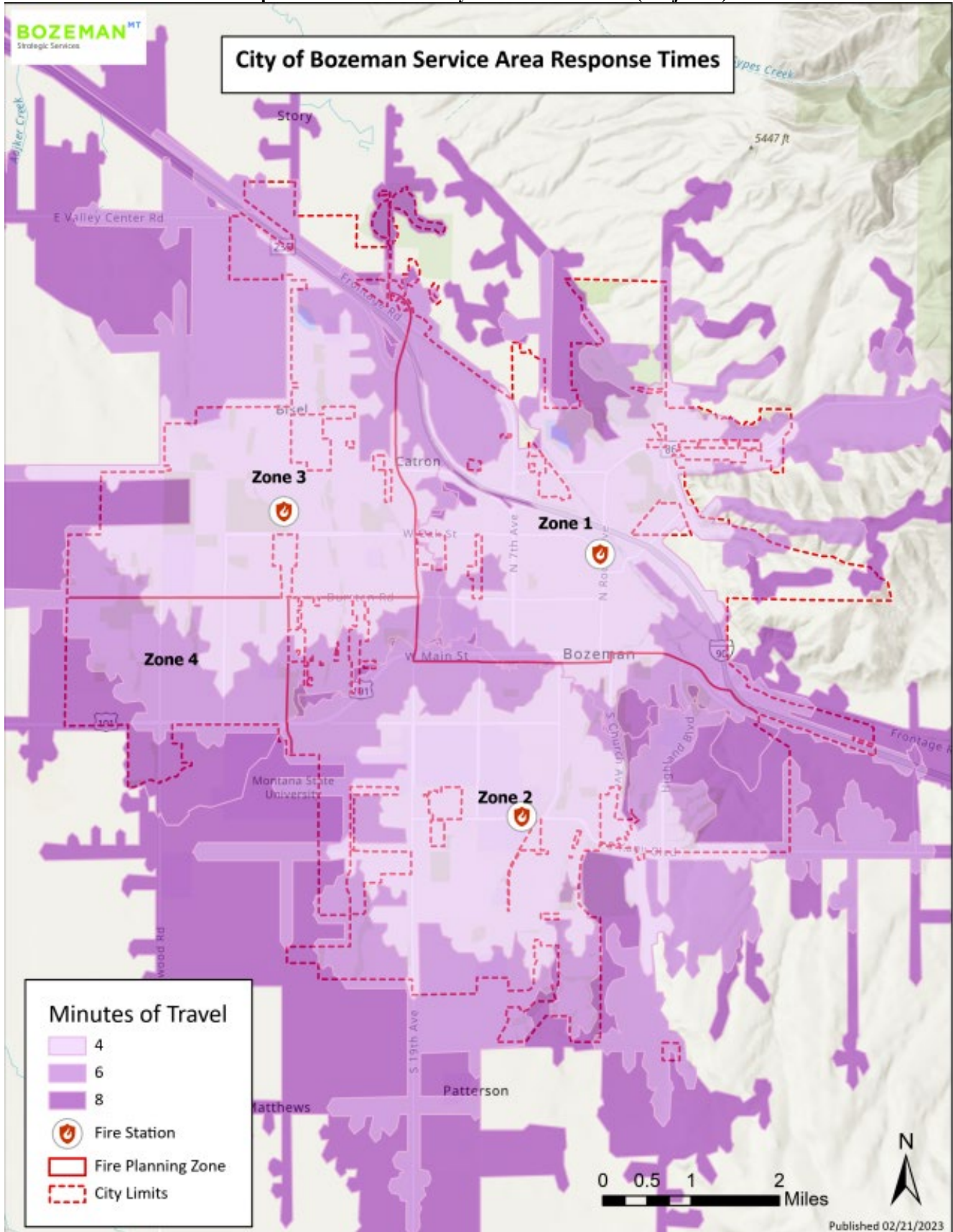
(Population is based on 2020 census data. Bozeman sees an average 4% population growth year to year. However, during the COVID pandemic, population growth is estimated to have far exceeded standard growth.)

The following maps display the estimated travel distance from station locations within the Bozeman Fire Department coverage area. The first map uses current fire station locations. The second map shows estimated travel distances based on the projected relocation of Station 2.

Map 24: Travel Distances by Minutes from Stations (Current)



**Map 25: Travel Distances by Time from Stations (Projected)**



## Concentration Factors

Many calls for service require multiple response units to meet the critical tasks needed to bring the incident under control. This is referred to as the “effective response force” (ERF). The location of an emergency call is a crucial factor in the ability of an ERF to arrive in a timely manner. Many of the responses by the BFD will have ERF needs met by only department units. However, calls of higher severity will require mutual and automatic aid departments to respond into city limits.

When call locations are situated centrally, an ERF is able to assemble on-scene in a short time. This drives the effort to strategically locate fire stations where units are available to respond to high-demand areas.

The BFD has distinct response/planning zones. Zones 1, 2, and 3 are served by a corresponding apparatus. Zone 4 does not have a responding apparatus located within its boundaries. Furthermore, Zone 4 is remote from the center of the coverage area, leading to a delay in ERF total response times.

Because the department relies on aid agencies to satisfy the needs of the ERF, there will be a delay as those units respond from outside city limits. This delay translates into longer total response times for the arrival of ERFs for any high-acuity call, such as a structure fire.

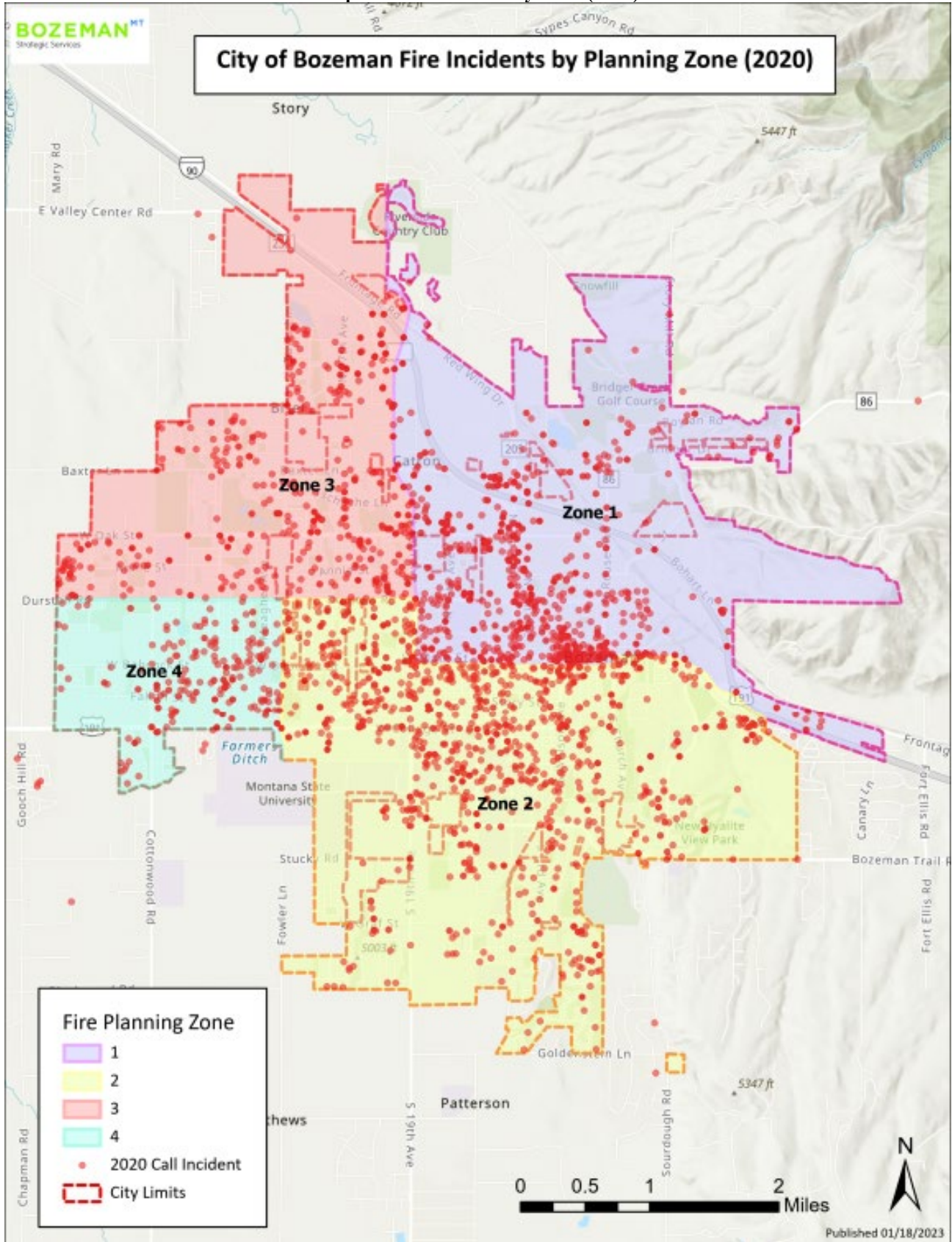
As the community continues to grow, it will be imperative for the department to strategically locate its resources. When factoring fire station locations and district boundaries, emergency response concentration should drive the decision.

The following table and maps identify the total call response by zone. Further, the maps illustrate the concentration of calls near the city's center.

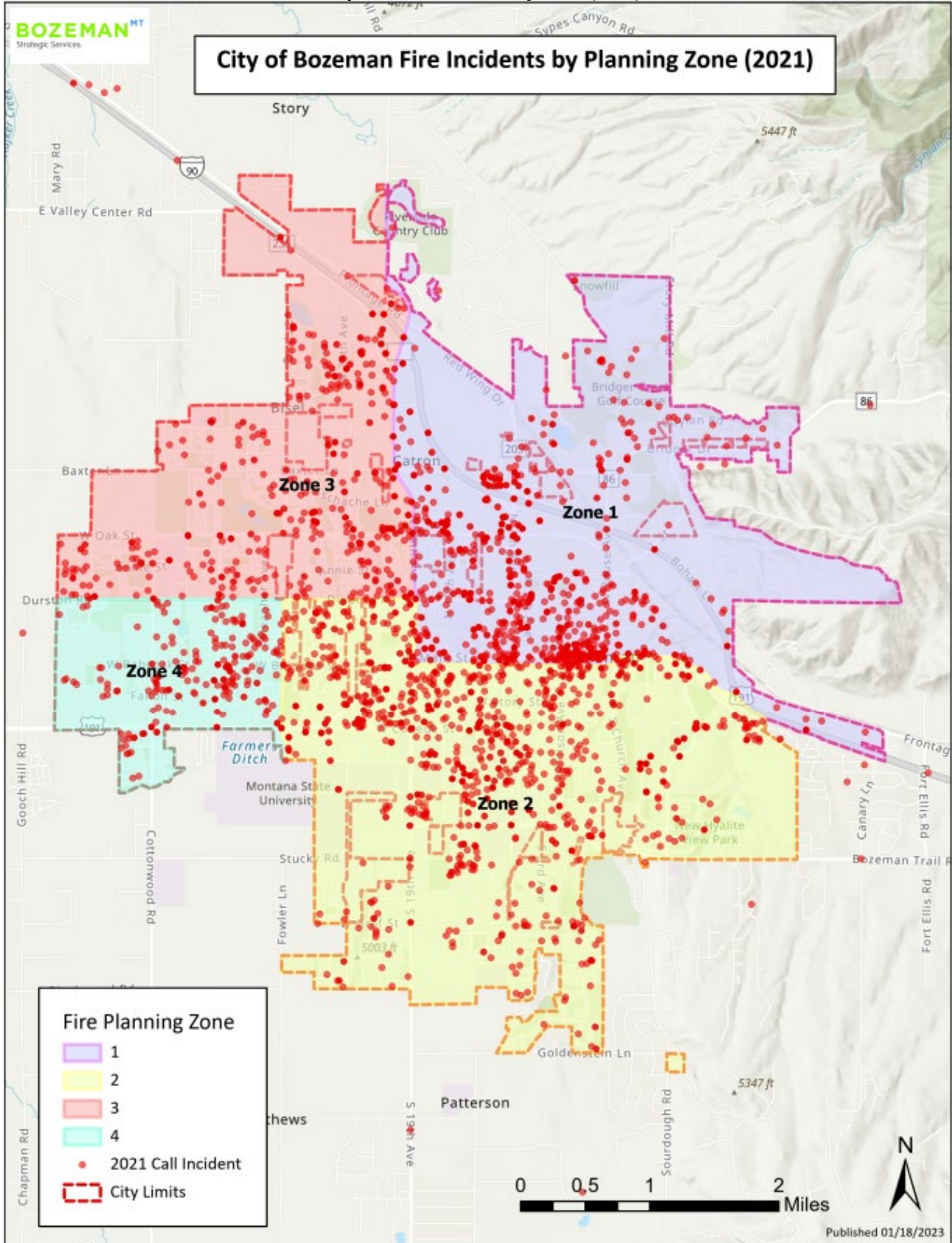
**Table 13: Total Call Response by Zone (2020-2022)**

Year	2020	2021	2022
Zone 1	714	713	830
Zone 2	671	738	659
Zone 3	275	297	389
Zone 4	110	111	112

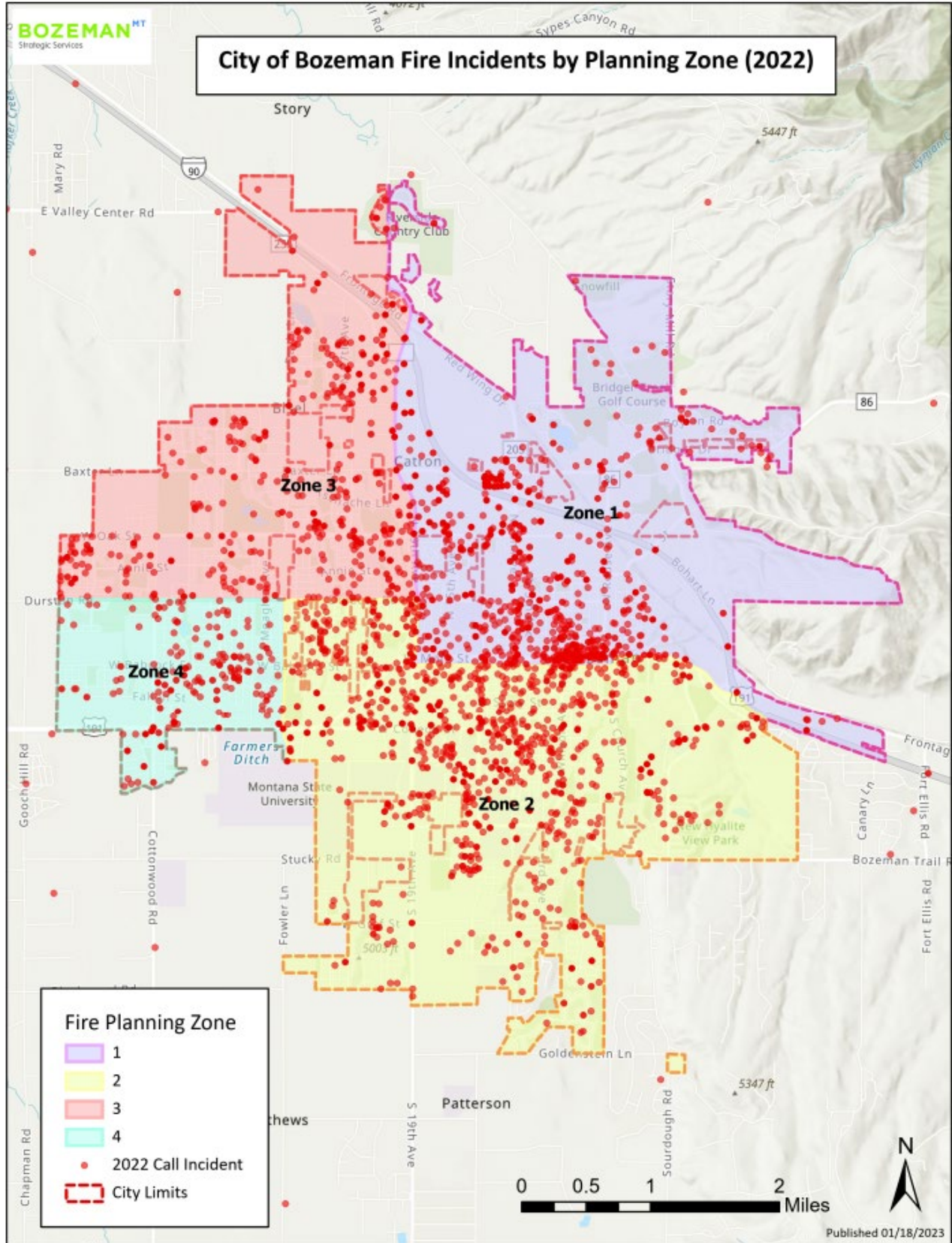
Map 26: Fire Incidents by Zone (2020)



Map 27: Fire Incidents by Zone (2021)



Map 28: Fire Incidents by Zone (2022)



## Reliability Factors

The Bozeman Fire Department reviewed 2020 through 2022 data to determine apparatus reliability by zone. The data was affected by numerous factors, including:

1. Apparatus dispatched by the closest available unit. Based on where the apparatus was in the district, another unit may have been assigned. If E-1 was at the east end of its district, another unit would most likely be assigned to a call in the west end of Station 1’s district. It should be noted the data is based on how the district lines are drawn.
2. Apparatus out of district (training exercise, grocery store, running errands, etc.).
3. Apparatus already assigned to another event.
4. Apparatus response impacted by other factors. Apparatus was delayed (train, road, or weather conditions) or diverted to a higher acuity call type.
5. Apparatus out of service. Apparatus out for maintenance, UL testing, hose testing, assigned to public education, assigned to training academy, etc.

When a frontline apparatus (E-1, E-2, or TK-3) is out of service, reserve Engine 4 is placed into service in that district. Data analysis did not reveal what district E-4 was in; thus, it is separated to follow. It should be noted that the percentages in the table do not add to 100%. This is due to a margin of error created by unit responses that were not measured in historical data (i.e., E-4, Brush 1, Medic 1, Battalion 1).

**Table 14: Reliability by Zone (2020-2022)**

<b>Zone 1</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
E-1 response in Zone 1	60.1%	52.6%	67.0%
Other unit response in Zone 1	34.2%	37.0%	30.7%
<b>Zone 2</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
E-2 response in Zone 2	54.1%	55.8%	67.7%
Other unit response in Zone 2	40.8%	37.2%	31.4%
<b>Zone 3</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
TK-3 response in Zone 3	61.8%	64.6%	69.7%
Other unit response in Zone 3	29.6%	30.3%	26.0%
<b>Zone 4</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
E-1 response in Zone 4	0.9%	4.5%	5.4%
E-2 response in Zone 4	64.5%	73.0%	61.6%
TK-3 response in Zone 4	20.0%	20.7%	30.4%



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

## 2020

E-1	691 emergent calls	262 out of zone	37.9%
E-2	703 emergent calls	341 out of zone	48.5%
TK-3	298 emergent calls	128 out of zone	43%
E-4	117 emergent calls	Unknown	N/A

1,809 Emergent calls

Zone 1 = 714 total calls / 429 calls in zone 1 by E-1 / 244 calls ran by other units 60.1% reliability  
 \*\*\* E-4 = 41 calls unaccounted for

Zone 2 = 671 total calls / 363 calls in zone 2 by E-2 / 274 calls ran by other units 54.1% reliability  
 \*\*\* E-4 = 34 calls unaccounted for

Zone 3 = 275 total calls / 170 calls in zone 3 by TK-3 / 81 calls ran by other units 61.8% reliability  
 \*\*\* E-4 = 24 calls unaccounted for

Zone 4 = 110 total calls:  
 E-1 = 1 calls  
 E-2 = 71 calls  
 TK-3 = 22 calls  
 E-4 = 16 calls

## 2021

E-1	659 emergent calls	283 out of zone	42.9%
E-2	776 emergent calls	368 out of zone	47.4%
TK-3	337 emergent calls	145 out of zone	43%
E-4	143 emergent calls	Unknown	N/A

1,915 Emergent calls

Zone 1 = 713 total calls / 375 calls in zone 1 by E-1 / 264 calls ran by other units 52.6% reliability  
 \*\*\* E-4 = 74 calls unaccounted for

Zone 2 = 738 total calls / 412 calls in zone 2 by E-2 / 275 calls ran by other units 55.8% reliability  
 \*\*\* E-4 = 51 calls unaccounted for

Zone 3 = 297 total calls / 192 calls in zone 3 by TK-3 / 90 calls ran by other units 64.6% reliability  
 \*\*\* E-4 = 15 calls unaccounted for

Zone 4 = 111 total calls:  
 E-1 = 5 calls  
 E-2 = 81 calls  
 TK-3 = 23 calls  
 E-4 = 2 calls

2022

E-1	786 emergent calls	232 out of zone	29.5%
E-2	785 emergent calls	334 out of zone	42.5%
TK-3	429 emergent calls	157 out of zone	36.6%
E-4	47 emergent calls	Unknown	N/A

2,047 Emergent calls

Zone 1 = 830 total calls / 556 calls in zone 1 by E-1 / 255 calls ran by other units **67% reliability**  
 \*\*\* E-4 = 19 calls unaccounted for

Zone 2 = 659 total calls / 446 calls in zone 2 by E-2 / 207 calls ran by other units **67.7% reliability**  
 \*\*\* E-4 = 6 calls unaccounted for

Zone 3 = 389 total calls / 271 calls in zone 3 by TK-3 / 101 calls ran by other units **69.7% reliability**  
 \*\*\* E-4 = 17 calls unaccounted for

Zone 4 = 112 total calls:  
 E-1 = 6 calls  
 E-2 = 69 calls  
 TK-3 = 34 calls  
 E-4 = 3 calls

**Dataset Qualification**

The establishment of thresholds for turnout, travel, and response times is a matter of deciding which data are to be included in an analysis and which are to be excluded. It is not an exact science but an estimation that favors settling on round numbers.

The upper threshold is the highest value included in the analysis. All values that are above the established upper threshold are excluded from analysis. All values equal or lower are included down to the lower threshold, which is the lowest value to be included in the analysis. All values below the lower threshold are excluded from analysis.

The following parameters and conventions were used to limit the analysis:

1. Outgoing mutual/automatic aid is excluded
2. Incoming mutual/automatic aid alarm handling, turnout, and travel time are excluded. The total response time for partner agencies is tracked and used to establish the arrival of the ERF.
3. All units other than response units are excluded
4. All non-emergency runs are excluded

Lower and upper thresholds were established by performing an analysis of the total data set for each incident type (structure fire, EMS, etc.) to determine two standard deviations from the mean for each interval (processing, turnout, etc.). The lower threshold for each incident type was established as 00:00:01 as times of zero, or a negative interval would be statistically insignificant for analysis. The upper thresholds for each interval were established by adding two standard deviations to the data set's mean for the given interval.

**Baseline Performance Tables**

Fire – All Calls 90th Percentile Times Baseline Performance			2020-2022
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:53
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:15
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:43
	Travel Time ERF <b>Concentration</b>	Urban	24:01
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	9:58
			n=787
	Total Response Time ERF <b>Concentration</b>	Urban	28:45
			n=756

EMS – All Calls 90th Percentile Times Baseline Performance			2020-2022
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:42
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:35
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:47
	Travel Time ERF <b>Concentration</b>	Urban	6:30
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	9:54
			n=3,395
	Total Response Time ERF <b>Concentration</b>	Urban	10:21
			n=3,368

Tech Rescue – All Calls 90th Percentile Times Baseline Performance			2020-2022
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	3:12
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:54
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:27
	Travel Time ERF <b>Concentration</b>	Urban	5:44
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	10:12 N=709
	Total Response Time ERF <b>Concentration</b>	Urban	10:21 n=266

Hazmat – All Calls 90th Percentile Times Baseline Performance			2020-2022
<b>Alarm Handling</b>	Pick-up to Dispatch	Suburban	2:17
<b>Turnout Time</b>	Turnout Time 1st Unit	Suburban	1:42
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Suburban	6:37
	Travel Time ERF <b>Concentration</b>	Suburban	6:37
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Suburban	10:24 n=210
	Total Response Time ERF <b>Concentration</b>	Suburban	10:24 n=210

# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

## Baseline Performance Tables by Risk Level

<b>Fire - Minimal</b>						
<b>90th Percentile Times</b>			<b>2020-2022</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>
<b>Baseline Performance</b>						
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:07	1:57	2:07	2:21
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:10	1:54	1:55	2:08
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	6:39	6:39	6:45	5:23
	Travel Time ERF <b>Concentration</b>	Urban	9:32	10:50	7:44	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	9:50	8:56	9:57	9:40
			n=18	N=6	N=6	N=6
	Total Response Time ERF <b>Concentration</b>	Urban	13:37	14:42	11:27	N/A
			n=5	N=3	N=2	N=0

<b>Fire - Low</b>						
<b>90th Percentile Times</b>			<b>2020-2022</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>
<b>Baseline Performance</b>						
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:29	2:35	2:32	2:03
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:09	2:07	2:09	2:08
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	6:10	6:19	6:05	6:09
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	9:38	9:40	9:45	9:38
			n=739	N=285	N=220	N=234

<b>Fire – Medium</b> 90th Percentile Times Baseline Performance			2020-2022	2022	2021	2020
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:02	1:52	2:09	1:48
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:10	2:03	2:19	2:09
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:29	5:36	5:23	5:10
	Travel Time ERF <b>Concentration</b>	Urban	24:57	17:19	26:39	20:24
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	8:49	8:20	9:07	9:06
			n=20	n=8	n=4	n=8
	Total Response Time ERF <b>Concentration</b>	Urban	26:32	18:49	28:17	21:34
			n=9	n=3	n=3	n=3

<b>Fire – High</b> 90th Percentile Times Baseline Performance			2020-2022	2022	2021	2020
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:17	3:37	2:03	1:16
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:19	2:25	2:08	1:34
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:40	5:13	5:00	6:01
	Travel Time ERF <b>Concentration</b>	Urban	26:54	29:05	17:57	16:33
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	10:23	10:55	9:32	8:36
			n=10	n=2	n=3	n=5
	Total Response Time ERF <b>Concentration</b>	Urban	30:18	32:57	19:41	17:14
			n=3	n=1	n=1	n=1

## COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

<b>EMS - Low</b> <b>90th Percentile Times</b> <b>Baseline Performance</b>			<b>2020-2022</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:44	2:18	2:49	2:11
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:36	1:40	1:34	1:40
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:50	5:53	5:46	5:54
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	10:01	9:58	10:02	9:50
			n=3,297	n=1,099	n=1,147	n=1,051

<b>EMS - Medium</b> <b>90th Percentile Times</b> <b>Baseline Performance</b>			<b>2020-2022</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:28	2:29	2:32	1:45
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:31	1:23	1:41	2:10
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:26	6:04	5:04	5:07
	Travel Time ERF <b>Concentration</b>	Urban	6:36	6:44	6:01	5:51
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	8:58	8:58	8:32	7:38
			n=98	n=45	n=27	n=26
	Total Response Time ERF <b>Concentration</b>	Urban	10:27	10:36	10:06	9:43
			n=71	n=35	n=20	n=16

<b>Tech Rescue – Low 90th Percentile Times Baseline Performance</b>			<b>2020-2022</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:51	1:55	1:45	1:51
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:55	2:01	1:58	1:44
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:28	5:33	5:25	5:21
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	10:03	10:12	9:18	9:12
			n=69	n=23	n=20	n=26

<b>Tech Rescue - Medium 90th Percentile Times Baseline Performance</b>			<b>2020-2022</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	3:17	3:22	3:27	3:12
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:47	1:46	1:44	1:58
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:21	5:22	5:39	5:14
	Travel Time ERF <b>Concentration</b>	Urban	5:40	5:38	5:46	5:20
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	10:14	10:14	10:33	10:13
			n=660	n=220	n=214	n=226
	Total Response Time ERF <b>Concentration</b>	Urban	10:36	10:38	11:01	10:24
			n=197	n=59	n=62	n=76

<b>Hazardous Materials - Medium 90th Percentile Times Baseline Performance</b>			<b>2020-2022</b>	<b>2022</b>	<b>2021</b>	<b>2020</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:17	2:19	2:19	2:14
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:42	1:40	1:53	1:39
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	6:37	6:34	6:39	6:38
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	10:24	9:55	10:55	10:27
			n=210	n=81	n=65	n=64



## I. Evaluation of Service Delivery

### Benchmarks

The Bozeman Fire Department is committed to ongoing evaluation of its response history to establish benchmark goals regarding service delivery. Benchmark goals are set by accounting for desired outcomes based on industry best practices and realistic data from department-specific performance.

NFPA 1710 outlines target benchmarks for the emergency response industry. The desired standards detailed in NFPA 1710 recommendations guide the BFD's adopted benchmarks; however, the NFPA standards do not account for specific departmental details, department budgets, availability of resources, staffing, and other necessities cause needed deviation from the standard.

To establish realistic goals, the department has evaluated historical data from 2020 through 2022 and determined that a 5% improvement across all risk types and categories will serve as the target benchmarks.

Setting the benchmark was accomplished by converting all times to seconds and multiplying the qualified dataset for historical performances by .95. The results were then converted back into mm:ss format. The resulting benchmarks represent a 5% improvement in all reportable categories for total response times.

Certain areas had insufficient historical data to establish a 5% improvement benchmark. In these circumstances (EMS high risk; hazardous materials low and high risk; technical rescue low and high risk; and extraordinary risk responses), benchmarks will be established by gathering data for similar critical tasking requirements from other call types/risk categories. For example, low risk hazardous materials and minimal risk fire responses require similar resources to meet the needs of the critical tasks. Therefore, the 5% improvement benchmark for low risk hazardous materials response can be driven by the data that exists for minimal risk fire responses.

### Baselines

Baselines are the established standard of response metrics given the three years of data collected. The baselines described represent performance at the 90<sup>th</sup> percentile. The 90<sup>th</sup> percentile is an accurate depiction of how the department performs while limiting the effect outliers may have on the data.

The BFD reports baseline performance metrics for each response type (fire suppression, EMS, technical rescue, and hazardous materials response). Baselines are further broken down by risk classification. The BFD has determined risk classes to include minimal (fire and technical rescue only), low, medium, and high. The additional extraordinary risk class was discussed for purposes of critical tasking and risk scoring. There is no data available to report on extraordinary risk class baselines. Other response types have limited data and will not be included in baseline reporting. The following baselines are also not reported due to lacking data: EMS high risk; hazardous materials response medium and high risk; and technical rescue low and high risk.

Baselines are necessary to establish the historical performance of the fire department's incident responses, and they set the stage that will allow the department to gauge the effectiveness of performance improvement measures.

## Performance Objectives

### Fire Suppression (Benchmark)

For 90 percent of all fire suppression incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be: **9 minutes and 28 seconds** in urban areas. The first due unit shall be capable of: providing 300 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing and advancing an attack line flowing a minimum of 150 gpm; establishing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing salvage operations. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

- For 90 percent of all **low risk** fires, the ERF is fulfilled by the first arriving unit, staffed with 2 firefighters and 1 officer, which shall arrive within **9 minutes and 9 seconds**.
- For 90 percent of all **medium risk** fires, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, shall be: **25 minutes and 13 seconds**.
- For 90 percent of all **high risk** fires, the total response time for the arrival of the ERF, shall be: **28 minutes and 47 seconds**.

The ERF for minimal risk fires shall be capable of: establishing command; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two in-two out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul.

The ERF for low risk fires shall be capable of: establishing command; sizing up the scene and ordering appropriate resources; deploying exterior fire attack lines; and rescuing at-risk victims.

The ERF for medium and high risk fires shall also be capable of placing elevated streams into service from aerial ladders; providing firefighter rehab; establishing a resource reserve; and establishing and operating division/group fireground functions. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

The department's baseline statements reflect actual performance during 2020-2022. The department relies on the use of automatic aid and mutual aid from neighboring fire departments to provide its effective response force complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

### Fire Suppression (Baseline)

- For 90 percent of all **minimal risk fires**, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, was: **9 minutes and 50 seconds** in urban areas.
- For 90 percent of all **low risk fires**, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer was: **9 minutes and 38 seconds** in urban areas.
- For 90 percent of all **medium risk fires**, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer was: **9 minutes and 50 seconds** in urban areas.

- For 90 percent of all **high risk** fires, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, was: **10 minutes and 23 seconds** in urban areas.

The first-due unit for all risk levels is capable of: providing 300 gallons of water and 1,500 gpm pumping capacity; initiating command; requesting additional resources; establishing and advancing an attack line flowing a minimum of 150 gpm; establishing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing salvage operations. These operations are done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

- For 90 percent of all **low risk fires**, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer, is: **9 minutes and 38 seconds** in urban areas. (The ERF for low risk fires is met by the first arriving unit).
- For 90 percent of all **medium risk fires**, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, is: **26 minutes and 32 seconds** in urban areas.
- For 90 percent of all **high risk fires**, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, is: **30 minutes and 18 seconds** in urban areas.

The ERF for minimal risk fires shall be capable of: establishing command; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two in-two out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul.

The ERF for low risk fires shall be capable of: establishing command; sizing up the scene and ordering appropriate resources; deploying exterior fire attack lines; and rescuing at-risk victims.

The ERF for medium and high risk fires shall also be capable of placing elevated streams into service from aerial ladders; providing firefighter rehab; establishing a resource reserve; and establishing and operating division/group fireground functions. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

## EMS (Benchmark)

For 90 percent of all emergency medical services (EMS) responses, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, shall be: **9 minutes and 24 seconds** in urban areas. The first-due unit shall be capable of: assessing scene safety and establishing command; sizing-up the situation; conducting an initial patient assessment; obtaining vitals and patient's medical history; initiating mitigation efforts within one minute of arrival; providing first responder medical aid including automatic external defibrillation (AED); and assisting transport personnel with packaging the patient.

- For 90 percent of **low risk EMS response** incidents, the total response time for the arrival of the effective response force (ERF), staffed with 2 firefighters and 1 officer, shall be: **9 minutes and 31 seconds** in urban areas. The first due unit meets the needs of the ERF.
- For 90 percent of **medium risk EMS response** incidents, the total response time for the arrival of the effective response force (ERF), staffed with 7 firefighters and officers, shall be: **9 minutes and 56 seconds** in urban areas. The ERF shall be capable of: providing incident command and producing related documentation;

appointing a site safety officer; completing patient assessment; providing appropriate treatment; performing AED; initiating cardiopulmonary resuscitation (CPR); and providing intravenous (IV) access-medication administration.

- For 90 percent of all **high risk EMS responses**, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers shall be: **28 minutes and 47 seconds**. This benchmark is set by using historical response data from high risk fire suppression responses. These call types require the same number of critical tasks to be performed on the scene; therefore, the ERF is the same. The ERF shall be capable of providing for mass casualty incident standard operations, including triage, treatment, and transport.

### **EMS (Baseline)**

The department relies upon American Medical Response (AMR), a third-party provider, to complete the transport-capable ERF component of its EMS program. The initial arriving fire department company has the capabilities of providing first responder medical aid, including basic and advanced life support, until the third-party provider arrives on scene. If the third-party provider unit arrives on scene first, its personnel initiate care, and the staff from the initial fire department company provide support as needed. When AMR is unavailable to respond to calls within the coverage area, the department will deploy an ambulance to provide for the transport-capable ERF component.

- For 90 percent of all emergency medical services (EMS) responses, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, was: **9 minutes and 54 seconds** in urban areas.
- For 90 percent of **low risk EMS response** incidents, the total response time for the arrival of the effective response force (ERF), staffed with 7 firefighters and officers, was: **10 minutes and 1 second** in urban areas. This ERF is satisfied by the first due unit. The first-due unit is capable of: assessing scene safety and establishing command; sizing-up the situation; conducting an initial patient assessment; obtaining vitals and patient's medical history; initiating mitigation efforts within one minute of arrival; providing first responder medical aid, including automatic external defibrillation (AED); and assisting transport personnel with packaging the patient.
- For 90 percent of **medium risk EMS response** incidents, the total response time for the arrival of the effective response force (ERF), staffed with 7 firefighters and officers, was: **10 minutes and 27 seconds** in urban areas. The ERF shall be capable of: providing incident command and producing related documentation; appointing a site safety officer; completing patient assessment; providing appropriate treatment; performing AED; initiating cardiopulmonary resuscitation (CPR); and providing intravenous (IV) access-medication administration.
- Insufficient data to analyze baseline **high risk EMS responses**.

### **Technical Rescue (Benchmark)**

For 90 percent of all technical rescue incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, shall be 9 minutes and 41 seconds in urban areas. The first-due unit shall be capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

- For 90 percent of all **minimal risk technical rescue responses**, the total response time for the arrival of the effective response force (ERF), staffed with 2 firefighters and 1 officer (the ERF is met by the first arriving unit), shall be: **9 minutes and 20 seconds**. This benchmark has been set as a 5% improvement in first-due unit data from all technical rescue responses.
- For 90 percent of all **low risk technical rescue responses**, the ERF is fulfilled by the first arriving unit, staffed with 20 firefighters and officers, which shall arrive within **28 minutes and 47 seconds**. This benchmark is set by using historical response data from high risk fire suppression responses. These call types require the same number of critical tasks to be performed on the scene; therefore, the ERF is the same.
- For 90 percent of all **medium technical rescue responses**, the total response time for the arrival of the ERF, staffed with 7 firefighters and officers, shall be: **10 minutes and 4 seconds**.
- For 90 percent of all **high risk technical rescue responses**, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, including the technical rescue team, shall be: **28 minutes and 47 seconds**. This benchmark is set by using historical response data from high risk fire suppression responses. These call types require the same number of critical tasks to be performed on the scene; therefore, the ERF is the same.

The ERF shall be capable of: appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support.

### Technical Rescue (Baseline)

- For 90 percent of all **minimal risk technical rescue responses**, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, was: **10 minutes and 3 seconds** in urban areas.
- Insufficient data to analyze baseline **low risk technical rescue responses**.
- For 90 percent of all **medium risk technical rescue responses**, the total response time for the arrival of the first-due unit, staffed with 7 firefighters and officers was: **10 minutes and 14 seconds** in urban areas.
- Insufficient data to analyze baseline **high risk technical rescue responses**.

The first-due unit is capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

- Insufficient data to analyze baseline **low risk technical rescue responses**.
- For 90 percent of all **medium risk technical rescue responses**, the total response time for the arrival of the ERF, staffed with 7 firefighters and officers, was: **10 minutes and 36 seconds** in urban areas.
- Insufficient data to analyze baseline **high risk technical rescue responses**.

The ERF is capable of: appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, victim extrication, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support.

### **Hazardous Materials (Benchmark)**

For 90 percent of all hazardous materials response incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, shall be: **9 minutes and 5 seconds** in urban areas. The first-due unit shall be capable of: establishing command; sizing up and assessing the situation to determine the presence of a potential hazardous material or explosive device; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing a hot, warm, and cold zone.

- For 90 percent of all **low risk hazardous materials responses**, total response time for the arrival of the ERF, staffed with 7 firefighters and officers, shall be: **10 minutes and 4 seconds**. This benchmark uses historical response data from medium risk technical rescue responses. These call types require the same number of critical tasks to be performed on the scene; therefore, the ERF is the same.
- For 90 percent of all **medium hazardous materials responses**, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer, shall be: **9 minutes and 53 seconds**.
- For 90 percent of all **high risk hazardous materials responses**, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers (including the hazmat technical team), shall be: **28 minutes and 47 seconds**. This benchmark is set by using historical response data from high risk fire suppression responses. These call types require the same number of critical tasks to be performed on the scene; therefore, the ERF is the same.

The ERF is capable of providing the equipment, technical expertise, knowledge, skills, and abilities to mitigate a hazardous materials incident in accordance with department standard operating guidelines.

### **Hazardous Materials (Baseline)**

- Insufficient data to analyze baseline **low risk hazardous materials responses**.
- For 90 percent of all **medium risk hazardous materials responses**, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, was: **10 minutes and 24 seconds** in urban areas.
- Insufficient data to analyze baseline **high risk hazardous materials responses**.

The first-due unit is capable of: establishing command; sizing up and assessing the situation to determine the presence of a potential hazardous material or explosive device; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing a hot, warm, and cold zone.

- Insufficient data to analyze baseline **low risk hazardous materials responses**.
- Insufficient data to analyze baseline **high risk hazardous materials responses**.

The ERF is capable of providing the equipment, technical expertise, knowledge, skills, and abilities to mitigate a hazardous materials incident in accordance with department standard operating guidelines.

### **Extraordinary Incidents**

The Bozeman Fire Department rarely encounters incidents of extraordinary magnitude. While there has been one incident of this type from 2018 through 2023, there is insufficient data to analyze the response efforts. Further, the majority of response needed in these circumstances relies heavily on distant mutual aid, unstaffed, and volunteer fire agencies. Depending on the specific type and severity of such incidents, there is a wide range of total response time

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expectations for meeting the ERF. With this information considered, the department cannot recommend benchmark times on extraordinary incident types.

## Performance Gaps – Baseline to Benchmark Time Gap

2020-2022 Minimal Risk Fire Suppression Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	9:50	9:20	00:30
		n=18		
ERF		13:37	12:56	00:41
		n=5		

2020-2022 Low Risk Fire Suppression Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	9:38	9:09	00:29
		n=739		

2020-2022 Medium Risk Fire Suppression Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	8:49	8:23	00:26
		n=20		
ERF		26:32	25:13	01:19
		n=9		

2020-2022 High Risk Fire Suppression Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	10:23	9:52	00:31
		n=10		
ERF		30:18	28:47	01:31
		n=3		

2020-2022 Low Risk EMS Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	10:01	9:31	<b>00:30</b>
		n=3,297		

2020-2022 Moderate Risk EMS Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	8:58	8:31	<b>00:27</b>
		n=98		
ERF	Urban	10:27	9:56	<b>00:31</b>
		n=71		

(No reportable data for EMS – High Risk Category)

2020-2022 Minimal Risk Tech Rescue Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	10:03	9:33	<b>00:30</b>
		n=69		

2020-2022 Moderate Risk Tech Rescue Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	10:14	9:43	<b>00:31</b>
		n=660		
ERF	Urban	10:36	10:04	<b>00:32</b>
		n=197		

(No reportable data for Technical Rescue – Low or High Risk Categories)

2020-2022 Medium Risk Hazardous Materials Response Times				
1st/ERF	Urban/Rural	Baseline	Benchmark	Gap
1st Due	Urban	10:24	9:53	<b>00:31</b>
		n=210		

(No reportable data for Hazardous Materials – Low, or High Risk Category)

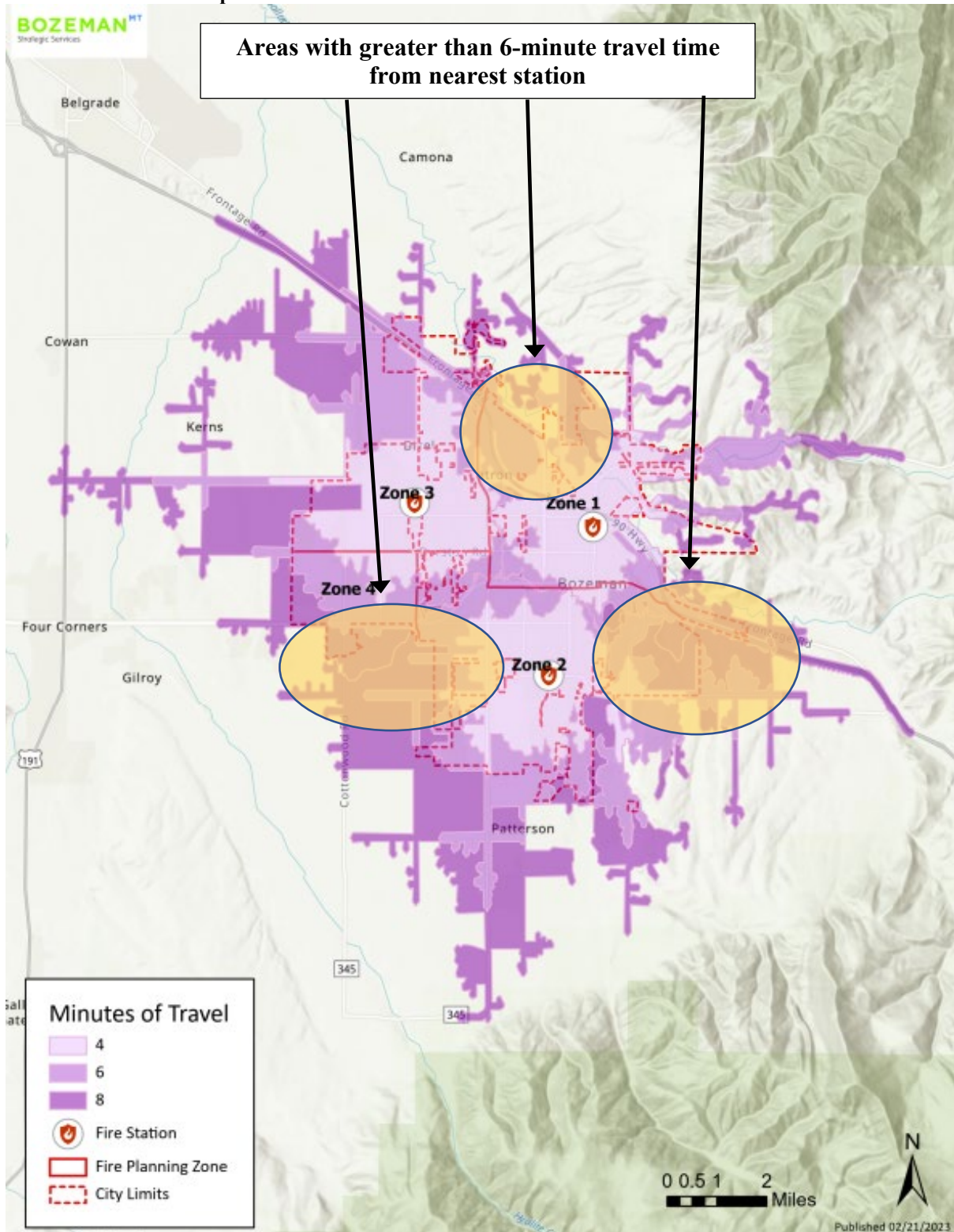
(No reportable data for Extraordinary Incidents)



### Community Areas for Program Delivery and Coverage Improvement

As evidenced in the following fire station travel time map, when Station 2 is relocated, a significant travel delay will exist in the southwest portion of the coverage district as well as the east portion. Significant portions of the coverage district are shown with 8 (or more) minute travel time, and a core portion of the city will see a 6-8 minute travel time.

Map 29: Areas with >6-minute Travel Time from Nearest Station



Bozeman is one of the fastest-growing cities in Montana and one of the fastest-growing cities of its size in the country. This growth has been in commercial sites and residential housing throughout the city. The three main areas with the most significant increase in construction are in the city's north, west, and south.

**North Bozeman**

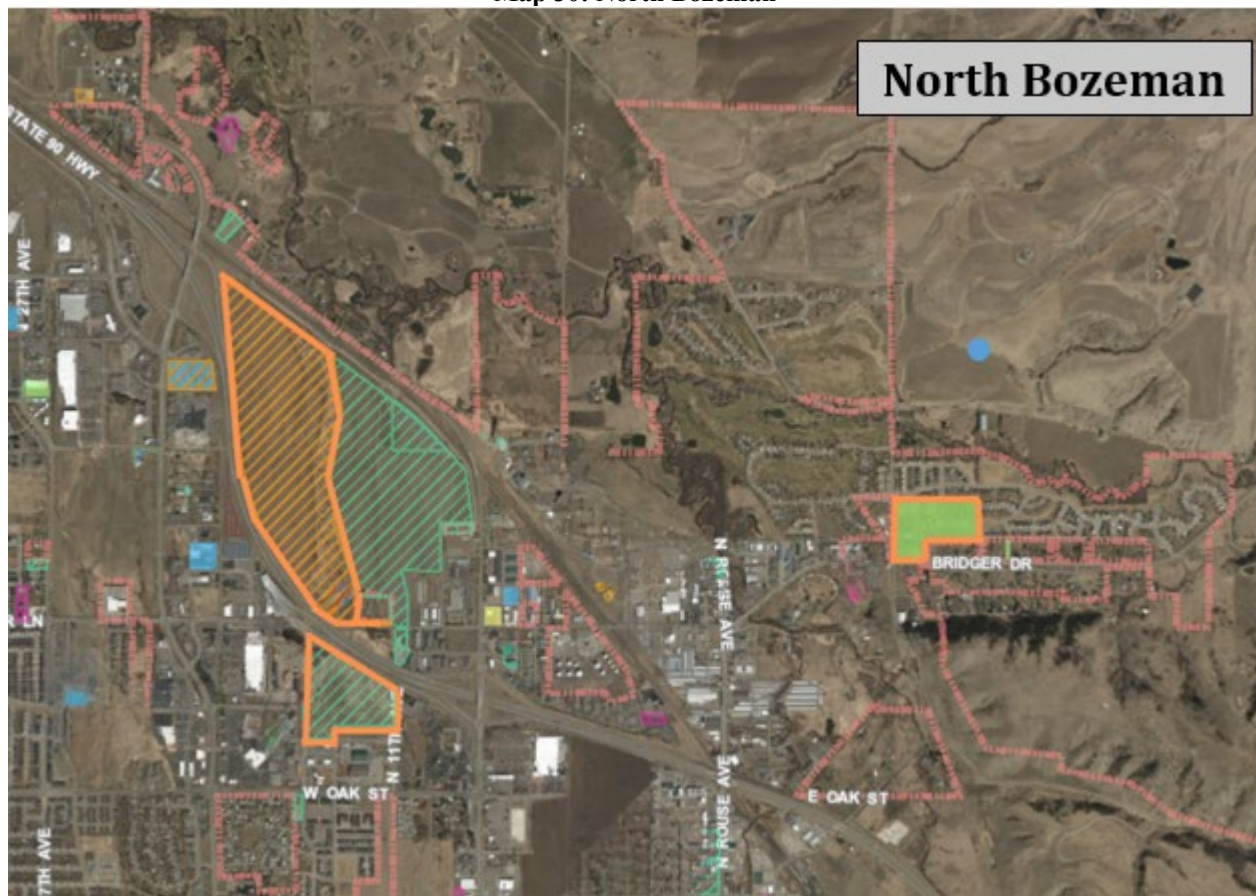
**North Park Westside** – Currently zoned as (M-1) light manufacturing and (M-2) manufacturing and industrial.

**North Park** – This 160-acre parcel has not determined its intended use yet but will be detailed in subsequent plans.

**Canyon Gate Subdivision** – Currently zoned as (R-3) residential medium density, (R-5) residential mixed-use high density, and (B-2M) community business district – mixed, (REMU) residential emphasis mixed-use.

**PT Land Subdivision Phase 3** – This is a 32-acre parcel zoned for Regional commercial and services.

**Map 30: North Bozeman**



## West Bozeman

**North West Crossings** – This 160-acre parcel is planned to have over 700 residential units and 150,000 square feet of retail, restaurant, and office spaces.

**West Part Phase I** – Will house 7 apartment buildings with a total of 102 units.

**West Side Flats Phase 2 and 3** – Will have 4-3 story 12 plex buildings and 2-3 story 18 plex buildings.

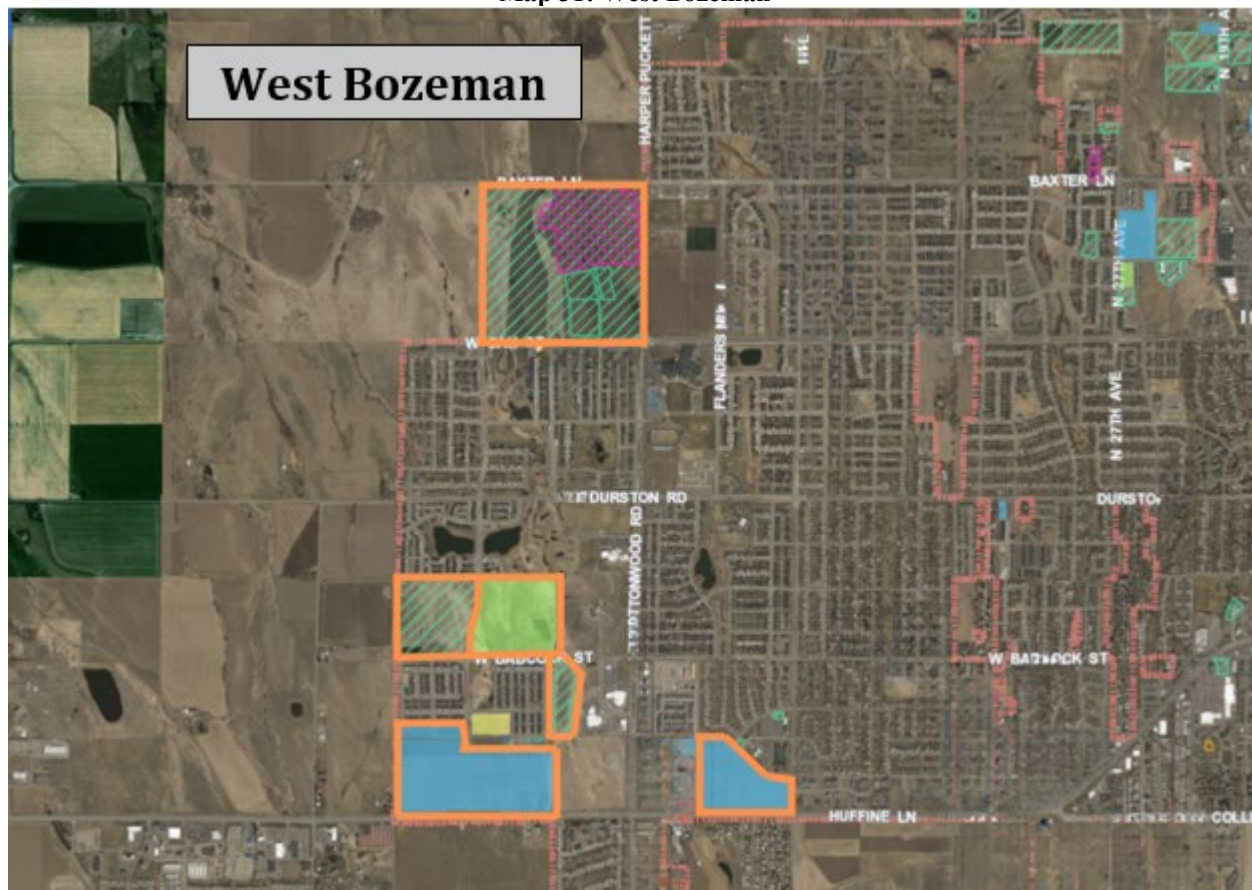
**Norton Ranch** – This is a 79-acre parcel that will have 138 residential units.

**Urban Farm** – This 18-acre parcel will be designed as residential and commercial use. More details will be provided in subsequent plans.

**May Fly Apartments** – This space will have four buildings and a total of 135 residential dwelling units.

**Ferguson Farm** – This is a 31-acre parcel that will have 35 buildings on it ranging from 2-5 stories in height. Future development plans show this will be used for commercial space.

Map 31: West Bozeman



## South Bozeman

**Aaker Neighborhood** – Designed for commercial and mixed-use. Further details of the development will be provided in future plans.

**Cottages at Bozeman** – This will be a residential development with 113 buildings and 256 residential dwelling units.

**Flats at Bozeman** – This development will have 45 buildings, 243 units, and 655 individual rooms. The approximate height of the buildings will be 63 feet.

**Jarrett Subdivision** – This development is zoned for (R-1 and R-2). They are currently undetermined on total amount of units to be built. More detailed plans will be provided in future plan submissions.

**Allison Subdivision Phase 4** – This is a 48-acre parcel zoned as (R-1, R-2, R-3). The current number of single-family, townhomes, and multi-residential has not yet been determined. Details will be provided in future plan submissions.

**South 40 ZMA** – This is a 38-acre parcel zoned as (R-1, R-2) residential single-household low density and residential two-household medium density. This development will have 332 buildings and 325 residential dwellings.

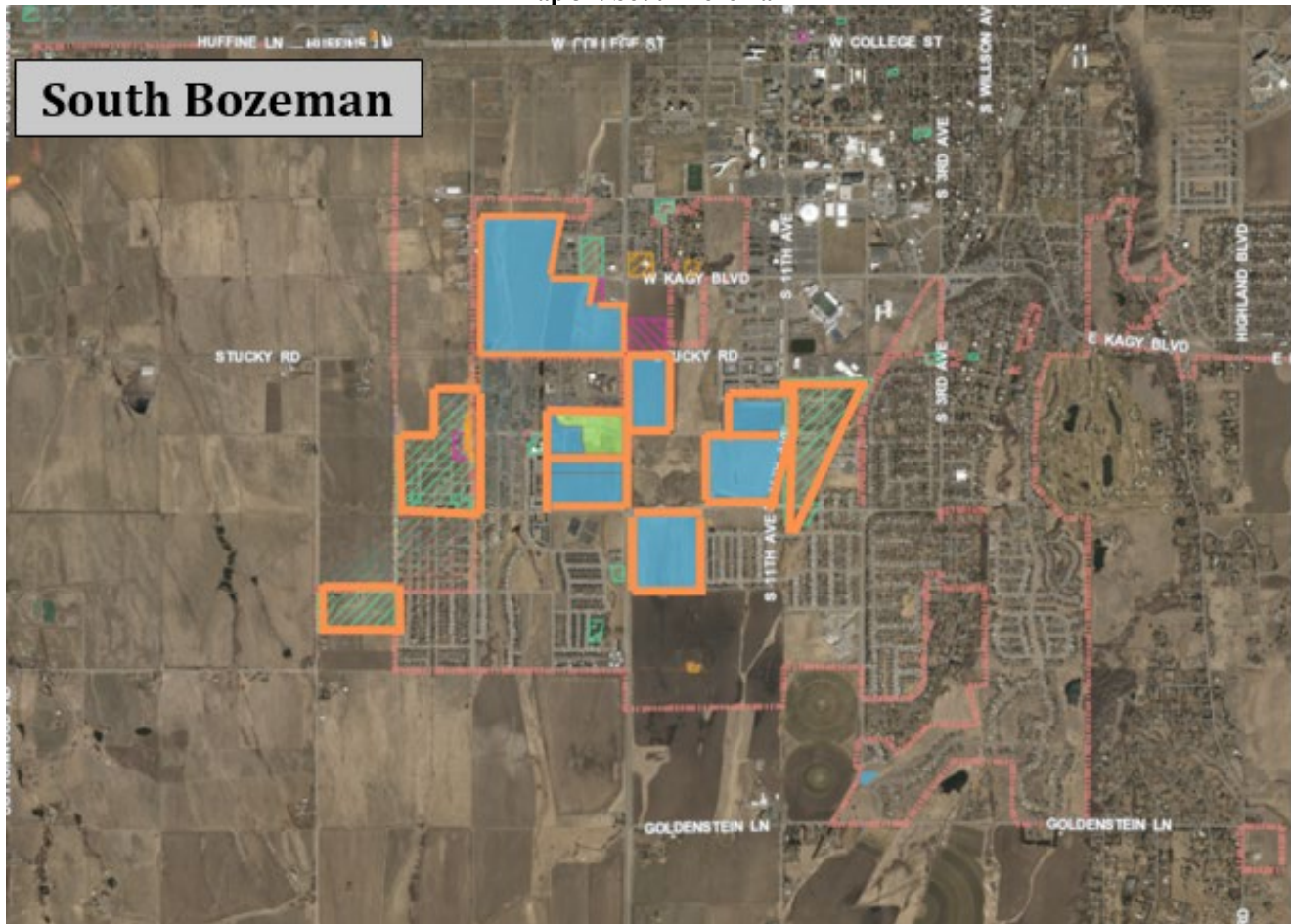
**2131 Graf Phase 1** – This is a 26-acre parcel development that is zoned for (R-4) residential mixed-use high density with a current plant of 460 dwelling units.

**Nexu Point** – This is a 20-acre parcel zoned as (R-5 and R-O) residential mixed-use high-density and residential-office. The current plan is to have nine buildings.

**Homestead at Buffalo Run** – This development will have 30 buildings, with 7 being multi-family, 8 row houses, and 14 duplexes.

**Gran Cielo Subdivision** – This is a 49-acre parcel zoned for multi-family. They are currently planning on 124 buildings.

Map 32: South Bozeman



## Recommendations for Improved Effectiveness in Deployment and Coverage

After evaluation of historical response data, existing and future plans for resource locations, development and growth in the area, and service demand forecast planning, the Bozeman Fire Department has developed the following recommendations:

### Short-Term Recommendations

- Focus efforts on minimizing out-of-district times for all resources.
  - o Develop a policy to hold shift-wide meetings and training utilizing web-based conferences when appropriate.
  - o When meetings and training must be conducted with all available response personnel, Station 1 should be utilized and backfill staffing should be considered for Station 2.
- Work with Gallatin County Dispatch to develop an early alerting system before unit assignment.
  - o Early notification of call type and address will enable units to start their response while dispatch continues to gather data to refine the resource package.

- Develop a move-up policy to staff high-demand zones when the home unit is on an extended event.
  - Based on historical data, call volume in the downtown corridor exceeds other areas within the city. When Station 1 or Station 2 units are dispatched to an extended event, such as a commercial gas leak or CPR in progress call, the on-duty battalion chief should request the Station 3 company move to cover the areas with a higher probability of calls for service.
- Improve reliability of MDT, AVL, and other systems to support improved data collection and dispatch reliability.
  - Technology can improve total response times, information available to responders, and the output data used to make system adjustments. When this technology is down, it has a negative impact on operations.
  - Institute a program that ties prevention resources (inspection and preplan data) to emergency operations can maximize the use of collected data relevant to a particular call.
- Research third-party entities that provide quality data identifying trends and improving the BFD's reporting capabilities.
  - Improvements to the data reporting methodologies could improve the overall validity and reliability of data used in the data-informed decision-making process.
- Evaluate the availability of automatic and mutual aid departments.
  - Ongoing evaluation of outside agencies' ability to commit resources for the BFD is essential to ensure these programs deliver the intended results.
- Improve mapping and preplanning.
  - Increased growth drives an increase in newly named streets and buildings. Instituting a way to capture newly created infrastructure into maps can improve response accuracy and decrease travel delays.
- Consider significant event staffing planning including community events, weather events, and other stresses on the system.
  - Certain events can stress the response system and create overlapping calls for service, which in turn can increase travel times and decrease response zone reliability.
- Work with local agencies to address construction closures and their impact on emergency services.
  - Street closures can negatively impact travel times. The BFD should take an active role in the closure permitting process to minimize the impact on service delivery.
  - Projects are currently tracked through the dispatch system, but the mapping system most units utilize during call response does not always account for street closures.
- Implement a robust quality assurance/quality improvement plan.
  - Dedicated resources monitoring system performances can identify trends and develop improvement strategies. These programs should track call processing, turn-out time, and travel times.
  - Improvement to the delay reporting and tracking procedures could identify patterns to be addressed by performance improvement strategies.

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- Add additional response units to existing stations to cover districts with poor reliability.
  - Increased staffing will reduce the reliance on automatic and mutual aid departments providing ERF critical resources.
  - Additional resources within the system will improve the reliability of all planning zones and current response apparatus.
  - Adding one unit to the system will reduce the impact of multiple calls in the system.

## Long-Term Recommendations

- Develop new stations and response units in the system.
  - Additional stations and units are necessary to address current issues in reliability, travel times, and increased calls for service stress on the system.
  - Further growth already planned within the area will exacerbate issues in the system. Considering time-to-completion for additional stations and resources, the BFD should take a proactive approach to secure resources for forecasted needs.
- Work with Gallatin County Dispatch to expand the system to include fire/EMS dedicated call-takers and dispatchers.
  - As the call volume and service demand increase, it will strain the Gallatin County Dispatch Center. The department should take proactive approaches to expand the center to dedicate resources to handle fire and EMS call processing.
- Work with area agencies to improve infrastructure, including roads and accessibility of developments.
  - The BFD should take an active role in the planning and development of the city to ensure that emergency services remain a top priority when planning roads and approving developments.
- Expand the capability of emergency medical transport availability.
  - EMS accounts for the majority of call responses for the department. Transport unit availability has a substantial impact on BFD unit availability. The department should take an active role in developing improvements to EMS transport service delivery.
- Training Site Plans
  - The department's current training site is poorly situated. The site is in the northeast corner of the city, and the two main roadways leading from the training site to the city have railroad crossings frequently blocked by a large volume of train traffic. The BFD should plan for a training facility between planning zones or incorporate it into additional station locations. This will reduce delays and improve travel time and reliability when responses are initiated from the training site.

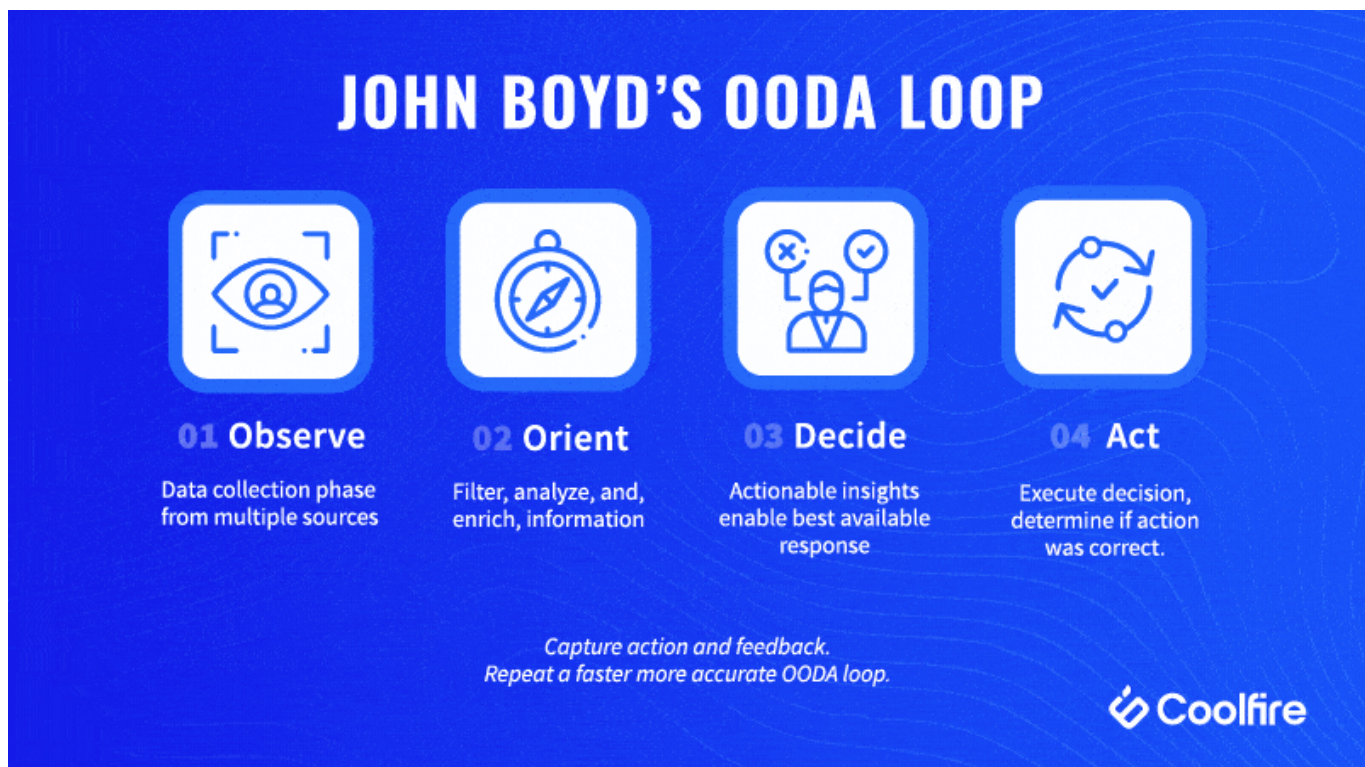
## J. Performance Maintenance and Improvement Plans

### Compliance Team/Responsibility

The Bozeman Fire Department (BFD) has assembled a team responsible for monitoring and addressing areas of compliance listed in this Community Risk Assessment/Standards of Cover (CRA/SOC) document. The team includes various BFD officials, including the fire chief, deputy chief of operations, deputy chief of prevention, accreditation manager, and representatives from battalion chiefs, captains, and fire inspectors. Due to the comprehensive nature of this document, the compliance team will seek engagement from subject matter experts and representatives from partner agencies as necessary.

### Performance Evaluation and Compliance Strategy

The BFD's compliance team will use John Boyd's Observe-Orient-Decide-Act (OODA) loop decision-making model, originally developed by military strategist and United States Air Force Colonel John Boyd. The model's central theme is to make quality decisions. A process must be in place to take in information, process that information, determine the course of action needed, and implement the action plan. Implementing the action plan will feed information into the first step, creating a loop of ongoing analysis and action.



**Figure 20: OODA Loop Decision Model**

Source: [www.coolfiresolutions.com/blog/ooda-loop-explained/](http://www.coolfiresolutions.com/blog/ooda-loop-explained/)



The OODA loop is relevant to the continuous improvement strategy and reflects the steps that need to be taken to progress toward the organization's pursuit of excellence.

The Bozeman Fire Department's compliance team will implement the OODA loop in the following manner:

- **Observe:** During this stage, the team will gather relevant data, including metrics studied in this document and any unforeseen changes. Additionally, the enactment of the recommendations will create unique areas of study that need to be incorporated into the data analysis.
- **Orient:** This stage is where the compliance team will ensure that the data gathered is reliable and qualified through the appropriate practices. This is also an opportunity for the team to review applicable policies and procedures that impact the topic being reviewed.
- **Decide:** This is the strategic development stage in the process. The compliance team, informed by data and related policies, will determine the best course of action to move towards outlined goals. The culmination of this stage will result in action planning and may include the development of trigger points.
- **Act:** This is the final stage in the process. It is the implementation of specific action plans. The implementation process will also include procedures to measure the outcomes of the actions taken. For example, if the action plan is to place a unit in service at a station during peak hours, the plan should also include the metrics that will be impacted by the newly available unit. These metrics may include the four basic measurements of performance: emergency workload, commit time, availability, and reliability.

Areas of improvement have been broken into two categories: short- and long-term. The compliance team will set out to make implementation plans toward short-term goals as appropriate, relevant, and timely. Long-term recommendations will require ongoing monitoring and strategic planning. The nature of these recommendations requires certain trigger points to be monitored by the compliance team. Trigger points are data-informed and tied to service delivery metrics. The thresholds outlined in trigger point analysis will need continued review and revision by the compliance team. As part of the annual report, trigger points identified for specific recommendations will be outlined by the compliance team.

## Short-Term Recommendations

- Focus efforts on minimizing out-of-district times for all resources.
- Work with Gallatin County Dispatch to develop an early alerting system before unit assignment.
- Develop a move-up policy to staff high-demand zones when the home unit is on an extended event.
- Improve reliability of MDT, AVL, and other systems to support improved data collection and dispatch reliability.
- Research third-party entities providing quality data that identifies trends and improves the BFD's reporting capabilities.
- Evaluate the availability of automatic and mutual aid departments.
- Improve mapping and preplanning.
- Consider significant event staffing planning. Include community events, weather events, and other stresses on the system.
- Work with local agencies to address construction closures and their impact on emergency services.

- Implement a robust quality assurance/quality improvement plan.
- Add additional response units to existing stations to cover districts with poor reliability.

### **Long-Term Recommendations**

- Develop new stations and response units in the system.
- Work with Gallatin County Dispatch to expand the system to include fire/EMS dedicated call-takers and dispatchers.
- Work with area agencies to improve infrastructure, including roads and accessibility of developments.
- Expand the capability of emergency medical transport availability.
- Develop plans to upgrade training facilities and site location.

### **Compliance Verification Reporting**

The Bozeman Fire Department will produce monthly compliance reports detailing the baseline metrics for responses within the coverage area. These reports will identify total responses, unit/zone reliability, and a breakdown of total response times. This monthly report will be sent to city leadership. The BFD leadership team will use these reports to keep informed on any developing trends.

The compliance team will meet quarterly and review monthly reports. After the meeting, the team will update the entire department regarding their findings. These meetings will be an evaluation of performance improvement implementations. Additionally, the compliance team will recommend any needed adjustments in the improvement plans, updates to trigger points, and suggest courses of action to be incorporated into the organization's strategic plan. The quarterly compliance team meeting will focus on the following topics:

- Incident response times, including dispatch call processing, turn out, travel, and total response times for medical and fire emergent responses.
- Recognize and analyze any deficiencies.
- Any deficiencies will be documented with proposed improvements.

At the final meeting of the calendar year, the compliance team will complete an annual report. This report will be part of the annual 'state of the department' presentation BFD leadership holds with city administration and local elected officials. The presentation will highlight performance metrics, including response baselines, benchmarks, and gap analysis. Any pertinent updates from relevant improvement measures will be documented as part of this annual report. It will also reflect any recommended changes to the Community Risk Assessment/Standards of Cover document.

Annual program evaluations will be completed by lead program personnel. These evaluations will be overseen by the accreditation manager. The template used in the program evaluation will include the following components:

- Evaluation of the previous year's performance.
  - Total response times, including call processing, turnout, and travel times.
  - Staff and response capabilities.
  - Notable deficiencies.

- Proposed changes and performance improvement plans.
- Budget allocations to facilitate:
  - Equipment maintenance and upgrades.
  - Staff education and training needs.

The annual program evaluations will be conducted at the conclusion of the calendar year. This timeline complements the department's budgeting schedule and allows time for requests to be appropriately vetted by the department's leadership team.

### Constant Improvement Strategy

All Bozeman Fire Department employees will receive this CRA/SOC and training on the information within the document. The training will include how risk was determined and the parameters of response times. For the CRA/SOC to be effective, all employees will be informed on how the department will improve service delivery, and feedback will be highly encouraged during and after the training sessions.

This document is considered a "living" document and will be reviewed annually and modified when necessary. This is the first CRA/SOC for the Bozeman Fire Department; thus, it establishes the groundwork for the department's future. With the projected changes in this document and buy-in from all stakeholders, the department expects to see improvements throughout all services delivered. By implementing this document, the Bozeman Fire Department will reach the next level as it strives for its core value of excellence.



## K. Appendices

### Appendix A: Critical Task Tables

Fire Incident Critical Tasks	
<b>Minor Severity Alarm</b>	
Command/Safety	1
Driver/Operator	1
Fire Control/Investigation	1
<b>Total personnel</b>	<b>3</b>
<b>Structure Fire - Appliance</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Fire Control/Investigation	1
<b>Total personnel</b>	<b>3</b>
<b>Structure Fire - Chimney</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Fire Control/Investigation	1
<b>Total personnel</b>	<b>3</b>
<b>Structure Fire - Extinguished</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Fire Control/Investigation	1
<b>Total personnel</b>	<b>3</b>
<b>Structure Fire - Smoke</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Fire Control/Investigation	1
<b>Total personnel</b>	<b>3</b>
<b>Vehicle Fire</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Fire Control	1
<b>Total personnel</b>	<b>3</b>
<b>Outside Fire</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Fire Control	1
<b>Total personnel</b>	<b>3</b>
<b>Controlled Burn</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Fire Control	1
<b>Total personnel</b>	<b>3</b>

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Fire Incident Critical Tasks	
Moderate Explosion	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Fire Control	1
On Deck team	2
Water supply/support	1
<b>Total personnel 7</b>	
Low Acuity Fire with injuries	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Fire Control	1
Pt Care/Transport (AMR)	2
<b>Total personnel 6</b>	
Wildland Grass/Brush	
Command	1
Safety	
Scene Size-Up	
Crew Leader	2
Driver/Operator	2
Fire Control	2
<b>Total personnel 7</b>	
Significant MVA Fire Hazmat	
Command/Safety	1
Crew Leader	1
Driver/Operator	1
Fire Control	1
Exposure protection	2
Leak/Runoff containment	2
On Deck team	2
Water supply/support	1
Decon	2
<b>Total personnel 13</b>	
Explosion with injury	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Fire Control	1
Pt Care/Transport (AMR)	2
On Deck team	2
Water supply/support	1
<b>Total personnel 9</b>	
MVA Fire Entrapment	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Fire Control	1
Extrication	2
Extrication crew leader	1
Pt Care/Transport (AMR)	2
<b>Total personnel 9</b>	
Structure Fire - Residential	
Command	1
Safety Officer	1
Fire attack	2
Driver/Operator	1
On Deck/RIT	2
Search/Rescue	2
Ventilation	2
Water supply/support	1
Rehab (AMR)	2
<b>Total personnel 14</b>	

Fire Incident Critical Tasks		
<b>Critical</b>		
<b>Structure Fire - Commercial</b>		
Command		1
Safety Officer		1
Fire attack		4
Staging officer		1
Driver/Operator		1
On Deck/RIT		4
Search/Rescue		4
Ventilation		2
Rehab (AMR)		2
<b>Total personnel</b>		<b>20</b>
<b>Structure Fire - with injury (residential)</b>		
Command		1
Safety Officer		1
Division Supervisor		1
Staging Officer		1
Fire Attack		3
On Deck/RIT		3
Search/Rescue		3
Exposure protection		2
Ventilation		2
Pump operator		1
Rehab (AMR)		2
<b>Total personnel</b>		<b>20</b>
<b>Structure Fire - Multi Residential</b>		
Command		1
Safety Officer		1
Fire attack		4
Staging officer		1
Driver/Operator		1
On Deck/RIT		4
Search/Rescue		4
Ventilation		2
Rehab (AMR)		2
<b>Total personnel</b>		<b>20</b>
<b>Extraordinary</b>		
<b>Structure Fire - 4 + stories (residential)</b>		
Command		1
Safety Officer		1
Division Supervisor		1
Staging Officer		1
Fire Attack		3
Back-up team		3
On Deck/RIT		3
Search/Rescue		4
Exposure protection		2
Ventilation		2
Pump operator		1
Water supply/support		1
Salvage/Overhaul		4
Rehab (AMR)		2
<b>Total personnel</b>		<b>29</b>

# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

EMS Incident Critical Tasks	
Minor	
Critical Tasks - EMS low acuity	
Patient Care	2
Safety/Command	1
Transport	2
<b>Total personnel</b>	<b>5</b>
Moderate	
Critical Tasks - CPR	
Command	1
Safety	
Scene Size-Up	1
Team Lead	
Patient Assessment	1
Ventilation/Airway	1
Compressions	1
Monitor	1
Medications/IV/IO	
Driver/Scene logistics	1
<b>Total personnel</b>	<b>6</b>
Significant	
Critical Tasks - Small MCI 2-4 Patients	
Command	1
Safety	1
Triage Officer	1
Transport Officer	1
Treatment/Transport	8
<b>Total personnel</b>	<b>12</b>
Critical	
Critical Tasks - Large MCI 5+ patient	
Command	1
Safety	1
Scene Size-Up	1
Triage Officer	1
Transport Officer	1
Treatment Officer	1
Staging	1
Transport Personnel	6
Treatment Personnel	2
Triage Personnel	4
<b>Total personnel</b>	<b>19</b>

Hazardous Materials Incident Critical Tasks	
<b>Minor Severity</b>	
Gas odor/leak	
Command/Safety	1
Driver/Operator	1
Investigation	1
<b>Total personnel</b>	<b>3</b>
<b>Spill/Release</b>	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Product Control	1
<b>Total personnel</b>	<b>3</b>
<b>Moderate</b>	
HazMat leak w/ injury	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Detection/Monitoring	1
Patient Care/Transport (AMR)	2
<b>Total personnel</b>	<b>6</b>
<b>MVA Hazmat release</b>	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Detection/Monitoring	1
Dike/Dam/Divert	2
Leak/Spill Control	2
<b>Total personnel</b>	<b>8</b>
<b>Significant</b>	
MVA Hazmat entrapment	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Detection/Monitoring	1
Vehicle Stabilization	2
Extrication	2
Hazmat Product Control	2
Water supply/support	1
Decon	2
<b>Total personnel</b>	<b>13</b>
<b>Critical</b>	
Hazmat Large Spill/Release	
Command	1
Safety Officer	1
Entry Team Leader	1
Medical	1
Research	1
Entry Team	3
Back-up Team	3
Decon	4
Ventilation/Monitoring	2
Pump operator	1
Rehab (AMR)	2
<b>Total personnel</b>	<b>20</b>



# COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER

Technical Rescue Critical Tasks	
Minor Severity	
Elevator Malfunction	
Command/Safety	1
Driver/Operator	1
Operations/Investigation	1
<b>Total personnel</b>	<b>3</b>
Trapped animal - service call	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Operations/Investigation	1
<b>Total personnel</b>	<b>3</b>
SAR - Urban missing person	
Command	1
Safety	
Scene Size-Up	
Driver/Operator	1
Investigation	2
<b>Total personnel</b>	<b>4</b>
Moderate	
Motor vehicle accident w/ injury	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Extrication	2
Vehicle Stabilization	2
Patient Care/Transport (AMR)	2
<b>Total personnel</b>	<b>9</b>
MVA - high speed roadway	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Operations/Investigation	1
Pt Care/Transport (AMR)	2
<b>Total personnel</b>	<b>6</b>
Ice Rescue	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Ice Rescue team	2
Shore support	2
Patient Care/Transport (AMR)	2
<b>Total personnel</b>	<b>8</b>

Technical Rescue Critical Tasks	
Significant	
High Angle Rope Rescue	
Command	1
Safety	
Scene Size-Up	
Operations leader	1
Safety	1
Belay	2
Rescue team	2
Anchor	2
Patient Care/Transport	2
<b>Total personnel</b>	<b>11</b>
Confined Space Rescue	
Command	1
Safety Officer	1
Entry Team	2
Back-up Team	2
Air Monitoring	1
Rope technician	2
Ventilation	2
Water supply/support	1
Patient Care/Transport	2
<b>Total personnel</b>	<b>14</b>
Trench Rescue	
Command	1
Safety Officer	1
Operations leader	1
Entry Team	2
Shoring/stablization	4
Back-up team	2
Ventilation	2
Rehab (AMR)	2
<b>Total personnel</b>	<b>15</b>
Critical	
Building Collapse	
Command	1
Safety	1
Operations leader	1
Shoring/Stablization	4
Search/Rescue	4
On-Deck/Back-up	2
Extrication	2
Patient Care/Transport	4
<b>Total personnel</b>	<b>19</b>
MVA - high speed roadway	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Driver/Operator	1
Operations/Investigation	1
Pt Care/Transport (AMR)	2
<b>Total personnel</b>	<b>6</b>
Ice Rescue	
Command	1
Safety	
Scene Size-Up	
Crew Leader	1
Ice Rescue team	2
Shore support	2
Patient Care/Transport (AMR)	2
<b>Total personnel</b>	<b>8</b>